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IN THE MUNICIPAL INDEX AND ATLAS (the annual reference volume of data and condensed catalogs published by the American City Magazine Corporation) readers will find statistical material, and articles on a wide variety of municipal and public works subjects, not published in the monthly issues of the magazine.

See pp. 17, 18, 20, 109, 111, 115 for catalogs and publications on municipal and civic subjects

For Index to Advertisements see page 130

Good Management

BEGINS WITH

Good Measurement

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PITTSBURGH IMO METERS

THE average water works superintendent's job is a two-fold one. His first responsibility is to his consumers—to see that they are furnished with an adequate supply of pure, healthful water. His second responsibility is to his community—to see that water is distributed and billed at the lowest possible cost commensurate with the service rendered. The superintendent must, perforce, combine the duties of producer, distributor, purchasing agent, salesman and accountant. Accomplishing these functions to everyone's satisfaction requires good management to the 'nth degree.

Confidence in his measuring equipment gives the water works superintendent an assurance of accuracy in his dealings with consumers. Even more important from the management angle is the just and equitable revenue produced by accurate metering.

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Good management knows the value of good measurement. The installation of Pittsburgh IMO Meters gives both consumers and communities the best in water service at the lowest possible cost.

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THE MOST COMPLETE LINE OF WATER METERS IN THE WORLD

To Meet the Housing Emergency

Recommendations for Federal and Local Action

*Following its notable national conference of June 11-12, the National Committee on the Housing Emergency, through its Board of Directors, gave careful consideration to the report of its Committee on Recommendations and to numerous suggestions submitted by members and others who attended the Washington meeting. As a result, eleven recommendations have been adopted. These are now available in a mimeographed pamphlet which merits careful study both by public officials and citizen groups.**

Significant excerpts follow:

ADEQUATE housing for workers in defense industries is as much a part of the defense establishment of the nation as are cantonments for the armed forces or factory buildings in which to produce defense materials. Such housing must be provided without delay. If properly located, planned and constructed, it need not create future community burdens, but can in most places be made a valuable asset. In communities where housing surpluses may exist after the emergency, a logical and desirable means of eliminating the surplus would consist of getting rid of existing substandard dwellings rather than scrapping the defense housing.

The difficulties attendant upon such a program are obvious. But they are not insuperable. They call for searching study, competent planning, and effective programming. By these means new building during the present emergency presents an opportunity to do community replanning, to rid older sections of blight, and to assure stability for new development. It is not inevitable that defense housing shall become a nation-wide problem child of our post-emergency economy. On the contrary, defense housing, like any other properly planned public improvement, should accelerate the positive forces of redevelopment. It should help provide the means for overhauling and rejuvenating our communities, for defeating obsolescence and decay.

Federal-Local Relations

Official local participation in the planning and construction of defense housing, both public and private, is imperative. Federal agencies will have the principal and final responsibility in determining the existence of the need and its extent, but such determinations should take full account of any local housing programs which may be under way. When it comes to the intimate and sometimes intricate job of fitting the housing into the physical pattern of the community, with an eye to future benefit as well as to present need, the planning determinations should be made primarily by the local governmental authorities. They possess, or it is among their functions to possess, the requisite knowledge of the community; it is they who have the continuing responsibilities of local administration. Existing local housing authorities and state and local planning and other housing agencies should be officially recognized by the Federal Government, and their services should be utilized to the fullest possible extent.

Permanent or Demountable Housing?

The selection of the sites for defense housing and the planning of defense housing projects should be done in such a way as to facilitate rather than hinder the future use of the housing for the replacement of existing substandard housing and as part of the permanent housing supply of the community, having in mind the various rental levels and family sizes to be served. The ability of defense housing to replace substandard housing after the emergency will depend in large part on its usability by the low-income families occupying the substandard housing. This requires careful attention to location and design. In general, defense workers are more mobile than the low-income families who may later occupy defense housing, in that their higher incomes enable them to travel greater distances to work. There is thus a flexibility in the location of defense housing projects that makes it possible to take account of the more fixed locational factors which are pertinent to the future use of the housing by low-income families. Likewise, the design of defense housing, as dictated by the needs of defense workers, should, in so far as possible, be adjusted toward appropriateness to serve the requirements of future occupancy by low-income families. It is recognized that the future use of defense housing by families then occupying substandard housing will require the application of public subsidies to the extent that subsidy may be necessary in order to make the housing available at rents which such families can afford to pay.

Defense housing able to serve the future needs of the community should be of permanent construction. Defense housing above this amount should be provided through demountable units of satisfactory standards.

In order to reduce the cost and to expedite the production of defense housing, the greatest practical use should be made of already existing community assets through the reclamation of obsolete but physically sound residential structures, now served with pavements, utilities, schools, and other community facilities. This recommendation does not apply to areas so substandard as to require demolition and replanning, but to otherwise desirable neighborhoods threatened with decay, which could be saved by rehabilitation of outmoded dwellings if done on a sufficiently large scale.

Although differences of opinion exist on many phases of housing design and standards, a consensus on the part of responsible agencies and groups has been reached during the past six or seven years on many minimum requirements of space, light, ventilation, privacy and livability. These standards should be rigorously lived up to by all housing agencies both public and private. The observance of adequate standards does not slow down production nor materially increase costs. Such observance does assure that the emergency construction of today need not become the semi-slum of tomorrow. It is especially important to avoid undesirably high land coverage and high population densities in housing projects. Coverage and density should be controlled by community planning and project design and not by land costs. The Committee also calls attention to the importance of achieving architectural distinction in the design of housing projects.

Relations Between Public and Private Enterprise

There is no reason for conflict between public and private enterprise in the provision of housing. The division between the fields of operation of the two is set by private enterprise, since public housing authorities are permitted to provide housing only for families who are not provided by private enterprise with adequate housing at rents which they can afford. The same general principle should apply to defense housing: there is no reason for any public agency to spend funds for defense housing which can and will be provided speedily and adequately by private enterprise, under conditions of community planning and standards set forth above. But the converse must be fully recognized; there is an urgent need for, and an obligation on, the Federal Government to provide all needed defense housing that is not provided by private enterprise. The test is not theoretical; it is in terms of the speedy actual provision of suitable housing. Mere hopeful promises should not be permitted to delay the provisions of needed defense housing.

Congress should be urged to provide promptly the large additional funds that are needed for defense housing so that the provisions of such housing can keep pace with the expansion of defense production.

Community Facilities and Planning

Housing cannot stand apart from the community. It must be provided with all necessary community facilities and services. Plans for housing call for concurrent plans for utilities, schools, streets, transportation, recreation facilities and whatever else is necessary to make the housing a satisfactory functioning part of the community. Where such facilities required to serve defense housing exceed the normal needs of the community, projected reasonably ahead, or where the available resources of the community cannot provide such facilities, the Federal Government should assume their cost.

Housing projects, both public and private, should be given the protection of zoning and other planning measures designed to assure neighborhood stability. By the same means the community should protect itself against haphazard subdividing and other unregulated development. In defense areas there will probably be required, in addition to zoning, subdivision regulations, building and housing

(Concluded on page 62)

* Apply to the National Committee on the Housing Emergency, 6 East 45th Street, New York.

"My business is not as usual"

My BUSINESS is not as usual—not by a long sight.

I don't usually have 600 or more new Army and Navy and defense plants to equip completely and quickly.

And I don't usually have the rush of business that comes when every one else is working on defense.

When a country starts to hurry, about the first thing it calls for is more telephones.

It takes a lot of telephone calls to make a tank or an airplane or a cargo ship.

When a country goes all out to produce, it uses plenty of telephone service. We are all out for defense too—doing our best to keep ahead of the job.

"THE TELEPHONE HOUR" IS BROADCAST EVERY MONDAY. (N.B.C. RED NETWORK, 8 P.M., EASTERN DAYLIGHT SAVING TIME.)

BELL TELEPHONE SYSTEM

Our Municipal Notebook

Have You Insured Your City Records?

GROWING CONSCIOUSNESS of the essential importance of the records of a community has raised the problems of their storage and protection, and of the quicker, cleaner production of current records.

These problems have always existed, but in the past very little attention was given them because the only facilities were a vault with an iron door and ordinary files, for storage and protection, and pen and ink for production. During the last five years especially, the entire picture has changed. A better conception of vaults has been developed, with doors which will withstand the fiercest fire, new lines of fire-resistant safes and filing cabinets have been designed, and increasingly simple and effective accounting machines are producing clean, businesslike records with minimum drudgery.

But what if, after all these precautions, the hot destroyer should be successful? Not all municipal buildings are fireproof, and most of their contents are so much fuel. Again, in hundreds of municipalities, old procedures still prevail and record protection is of the flimsiest.

The missing factor, until this year indeed, was the availability of insurance to cover the loss of valuable records.

In response to growing demand on the part of public bodies and institutions, casualty companies began accepting the risk of public records. Only since April, 1941, has insurance of city records been available generally. Most of the companies now write it, except in Illinois, Minnesota, and Ohio, where for mysterious reasons of state it is not permitted. In the other 45 states, increasing advantage is being taken of this new insurance service.

Obviously, there are as yet no statistics of losses, as in the fire field, to indicate what the rates should be. Nevertheless, with the initiative characteristic of the casualty field, rates have been set up which appear to be fair and reasonable. For instance, one county has insured $10,000 worth of records at a premium of $75 for three years, or $25 per year, or 25 cents per $100 valuation.

There are two methods of insurance of records: blanket insurance where a total figure is set as the value of the records insured, and specific insurance where a specific amount of insurance is placed on each and every record insured. To figure the rate for blanket insurance, add 50 per cent to your basic fire-insurance rate; for specific insurance, add 5 per cent to your basic fire-insurance rate. The value which the insurance companies place on modern safes and files is indicated by the deductions allowed for their use: 25 per cent if the container bears Underwriters' Laboratories, Inc., Class A Fire Label or Safe Manufacturers National Association (SMNA) Four-hours Exposure Label; 12½ per cent for Class B or two-hours; 5 per cent for Class C or one-hour.

Clearly, insurance cannot take the place of physical protection, for no sum of money could reproduce, say, the tax records of a community. Still, the prompt receipt of a whacking indemnity in the event of such loss would be a substantial relief to the government and to the taxpayer. If the value of these records was placed at $100,000 by a certain city, at the rate paid by the county above quoted the annual premium would amount only to $250. Class A protection would reduce this cost by $62.50 per year, the saving in 20 years amounting to the cost of ten modern safe files. Consequently, modern record containers tend to pay for themselves in insurance savings.

An extraordinarily e c o n o m i c a l method of combining your insurance with the safest equipment is, where possible, to microfilm your valuable records, thus reducing them to a hundredth of their original size and storing the film record in a four-hour safe.

The Conflagration Chief

AERIAL BOMBING has brought a new conception of the fire department in the great cities and in cities having industrial plants. In any of these cities the fire chief may be called upon to assume greater responsibility than the mayor or the military commander. Upon his ability to use the equipment which his council or commission has given him will depend the existence of his city as a working and living force. He cannot stay the descent of bombs, but he must understand their natures and properties and scotch their effects. He must put himself on record in the matter of equipment and men that he deems necessary to performance of this unpredictable job.

PROPOSAL FOR ALL RISKS VALUABLE PAPERS INSURANCE

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2. Address of Assured.....
3. Location of Premises.....
4. Portion of Building occupied by Assured.....
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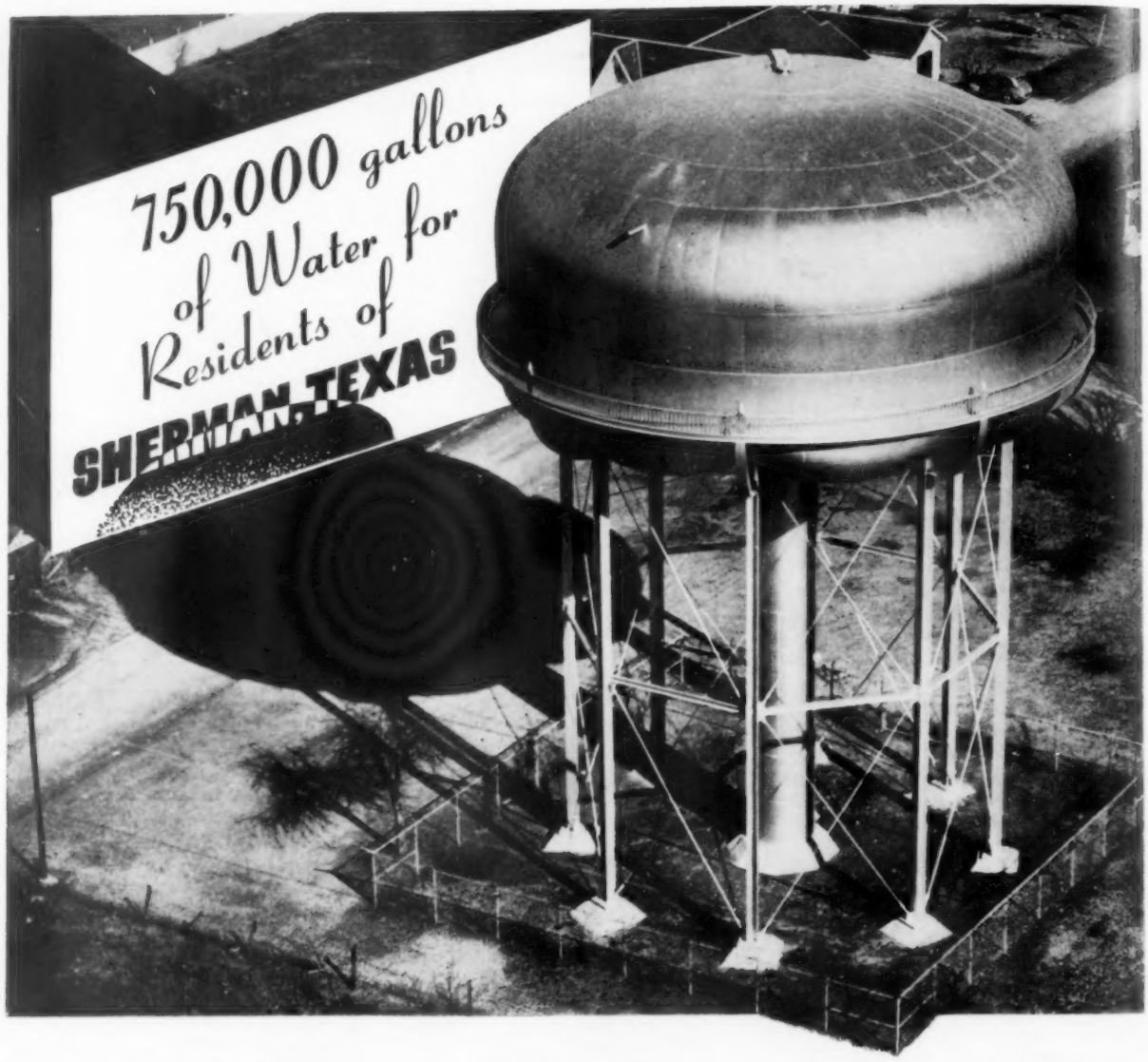
6. What is the 100% Fire Contents rate per $100.....
7. (a) Is the building fireproof?..... (b) Is it sprinklered throughout?.....
8. Give a complete description of the fire resistive equipment used to protect, at night or when the premises are not open, the property to be insured stating particularly whether such equipment bears Underwriters Laboratories, Inc. Class A, B or C label or SMNA label, "4 hours," "2 hours" or "1 hour" exposure:
9. If any of the property to be insured is kept in a vault above the grade floor, state whether such vault is built on a solid foundation from the ground up.....
10. Is there a private watchman inside premises at all times when premises are not regularly open for business?.....
    (a) Does he register hourly on a watchman's clock?.....
    (b) Does he signal an outside central station at least hourly?.....
11. Policy Period is to be from..... to.....
12. Amount of insurance.....
13. Has the Assured sustained any loss, or received indemnity for any loss, of the kind to be covered by this policy, within the last five years? If so, explain fully.....
14. Has any similar insurance applied for or carried by the Assured ever been declined or canceled within the last five years?.....
    If so explain fully.....
15. Remarks.....

AGENT OR BROKER..... ADDRESS.....

This is the information you need to give in order to obtain indemnity for your city records in case of damage to them



SHERMAN, TEXAS, is one of the many municipalities that have investigated the advantages offered by modern elevated storage tanks. As a result, this Southwestern city now has available, in the Horton radial-cone bottom tank shown above, a 750,000-gal. gravity supply to meet peak demands and maintain uniform distribution pressures throughout the water system at all times.

The Horton radial-cone bottom design is used for tanks ranging from 500,000 to 2,000,000-gal. capacities. This design readily lends itself to a variety of attractive architectural treatments that are economical to build. In all sizes, full capacity is available for use within a small range of head. Write for information or quotations on an installation to meet your needs. Address our nearest office.

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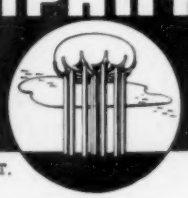

Plants at BIRMINGHAM, CHICAGO, and GREENVILLE, PA. *In Canada:* HORTON STEEL WORKS, LIMITED, FORT ERIE, ONT.

Do you mention THE AMERICAN CITY? Please do.

Water-Works Improvements

Munitions Manufacture Increases Use of Water

DEFENSE WORK is creating a larger demand for water in the New Haven area, according to G. Y. Gaillard, President of the New Haven Water Co. Industrial consumption of water increased in the New Haven area last year, while domestic use actually fell off. The total water consumption in 1940 was 10,031 million gallons, showing an average daily draft of 27.41 million gallons. There was no peak in the summer draft comparable with that of the previous year, and domestic consumption dropped from 476 million cubic feet to 450 million cubic feet, a loss of 26 million cubic feet. The industrial load increased from 341 million cubic feet to 360 million cubic feet, a gain of 19 million cubic feet.

There was a continued increase in pipe extensions and new connections, reflecting activity in housing developments carried on in the city and adjoining towns. The total amount of pipe laid increased from 54,000 linear feet to 62,000 linear feet, and the number of extensions increased from 182 to 233 per year.

The New Haven Water Co. is prepared to take care of any increased draft of water by its consumers. The large storage reservoir in North Branford and the construction of the interconnecting feeder system provides an adequate margin of safety. As mentioned in THE AMERICAN CITY, March, 1941, page 42, the company is cooperating with other Connecticut water companies and with the State Water Works Defense Committee in measures to insure adequate protection for all Connecticut supplies.

New Welded Water Line Serves Rangoon, India

A NEW 58-INCH DIAMETER WATER LINE, 43 miles in length, which utilized welded construction exclusively for fabrication of the pipe, was recently completed six months ahead of schedule and placed in service for the city of Rangoon, India. All welding was done with American-made equipment, furnished by The Lincoln Electric Co. The new water line delivers a new supply from Byobyu to Rangoon and was built for the new Pegu Yomas water works.

Steel plate used in fabricating the pipe was rolled by Tata Iron & Steel Co. at Jamshedpur and shipped by boat over the Bay of Bengal to Rangoon, where it was fabricated. Field connections of the weld-fabricated sections were made with Dresser couplings.

The fabrication of the pipe consisted of placing three 25-foot lengths of rolled plate, 62 inches wide by 7/16-inch thick, in specially made rings, welding the three inner longitudinal seams by one pass of a tractor-type welder, then removing the rings and welding the outer seams with the same equipment.

New Water Districts Increase in Michigan

MOST CITY PEOPLE probably think of their water supply as a convenience —if they think about it at all. It is so handy to turn a faucet and get a glassful of drinking water. And when city families move to the country they perhaps miss first of all the convenience of water under pressure. When their suburban community builds up, they find a way to get back what they gave up when they quit the city. During the last year a million dollars was spent in Michigan in building water works and laying mains to provide safe water supplies for suburban communities, and communities so small as not to be incorporated as villages.

In each case a water district was formed in township territory, and the township boards let the contracts, sold bonds and operated the plants when completed. The number of township water-district plants in Michigan is now 21, 10 of them built in the last year. The new water works have cost from $50,000 to $250,000 each and are serving from a few hundred persons to 7,000. Usually the source of supply has been wells, but lakes and other ground water supplies also have been used.

Aside from the convenience of water under pressure and the matter of fire protection, the water-district plants have been built in answer to a growing problem of sanitation. Fundamental sanitation requires a safe water supply and a proper method of sewage and waste disposal. The ten water-district plants completed during 1940 are: Carrolton, Milwaukee and Bridgeport, near Saginaw; Burton, south of Flint and Beecher, north of Flint; Troy and Waterford near Pontiac; Milwood, south of Kalamazoo; Bergland, in Ontonagon County; and Eagle River, in Keweenaw County. Property taxes have not been affected by these improvements in most instances, for revenue bonds have been sold to finance them. The revenues from water customers are pledged to the retirement of the bonds, and no levy can be made against other property.

The oldest township water district in Michigan is the Ira township plant, serving the communities of Fair Haven and Anchorville in St. Clair County. The plant was built in 1928 with a bond issue of $120,000, and the district is now preparing to add a filtration unit to its chlorination plant.

Other new small water plants were built during the last year, according to the Bureau of Engineering of the Michigan State Department of Health.

The 1,000,000-gallon toroidal bottom elevated tank built for Mason City, Iowa, by the Pittsburgh-Des Moines Steel Co. This tank is 76 feet 9 inches in diameter, and its high-water line is 101 feet above the top of the foundation

It Takes WATER TO WIN A WAR

FOR MEN, machines and materials there is no substitute for water. Every factory, city, air field, army camp or munition plant engaged in defense work should have an abundance of water—preferably from its own Well Water System. A water shortage or failure would play havoc with any production program.

In selecting a Well Water System you would first look to a firm that had a dependable reputation. It should have proven itself over a long period of time. Next, their product should be of unquestionable merit. All of these basic factors and many more are enjoyed by Layne—"The World's Largest Water Producers." The Nation-wide Layne organization has the men, equipment and skill to undertake and promptly complete any size water producing project anywhere in the United States or possessions.

If you would like to have facts concerning your water supply needs, write to Layne. Their engineers are ready to cooperate. They are specialists in the water producing field. They know water bearing formations, well drilling and pump installation. For bulletins on Layne Well Water Supplies and Turbine Pumps, write

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Municipal Airports

Municipal Airports Seek Operating Revenue

MUNICIPAL AIRPORT MANAGERS, who have seen airport operating costs mount with the growth of aviation, and now anticipate added expense because of the national defense program, are seeking ways to cut costs and to secure new revenues. According to the American Municipal Association, only about 10 per cent of the 650 municipal airports in the country pay their way. The other 90 per cent draw regularly on tax funds to meet operating deficits. Since airports have become routine municipal services, cities are less willing to subsidize them, and officials face the necessity of planning and budgeting expenditures to make the record show black instead of red.

The survey of the American Municipal Association shows that the typical terminal airport, one of approximately 200 listed as regular stops on scheduled air transport lines, gets about 86 cents of each dollar of income from four sources. These sources are landing fees, hangar and storage fees, rents, and income from oil and gasoline sales.

The schedule of charges varies widely, hangar and storage fees in nine cities range from $1 to $2 a night and from $5 to $50 a month. Annual income from ground rental and office space represents a sizable amount to a number of cities; one city receives $8,500 yearly, and others nothing. A few cities in the group charge for the use of landing facilities and floodlights. These cities charge fliers other than scheduled operators up to $125 a month for the use of the airport for each round trip.

Only a few municipal airports have developed sources of non-aviation revenue. Minneapolis reports a net income of $4,000 last year from a city-operated restaurant and additional income from hotel and garage facilities at the air field. Madison, Wis., adds $500 a year to airport income by leasing unused airport land to a farmer for planting. Little Rock, Ark., got $1,000 last year from a hay crop harvested from its 200-acre air field. New York City derived as much as $2,000 a day in revenue from charges for general admission and parking at LaGuardia Field until it closed the airport to sightseers recently.

The largest portion of the expenditure dollar of the 200 terminal airports — 53 cents — goes for salaries, while the other 47 cents go for light, heat and power, hangar operation, insurance, and other operating and maintenance expenses. As air transport activity increases, the expenses that mount are maintenance of the field area, runways, field lighting and air traffic control.

Among questions which officials in airport cities are asking are these: Do the air transports pay their share towards upkeep of airports? Are they paying equal amounts for equal services? If improvements for defense purposes are financed by Federal funds, how will airports pay for the added operating and maintenance expense?

Before cities can make a paying business out of airports, they need detailed and definite information on which fair standards of airport charges can be based, and they must get the habit of managing airports as carefully as other types of municipal enterprise. The Association survey suggested that the Civil Aeronautics Board might well gather the information necessary to arrive at a basis for airport charges. A similar step was taken in Great Britain, where the local governments submitted schedules of charges, and standard rates of charges were made up from the combined information.

Revenue for airport support might include taxes on gasoline for aviation use, now exempt in 28 states. Aircraft manufacturing plants located at or near airports could furnish revenue by paying for use of the field for test flights. Space now furnished free to governmental agencies such as the weather bureau and post office department might be rented, as it is in a few cities, since these agencies serve others besides fliers.

Portland, Ore., Airport Nearly Completed

WORK WAS STARTED IN 1937 on the new Portland-Columbia airport to replace the old Swan Island field, which had become inadequate for modern air transportation. The new port is on the Oregon side of the Columbia River and covers a mile square area one mile north of the city limits.

Reconstruction has involved clearing, filling, soil stabilization and raising the level of the field 4 to 5 feet with more than 4,000,000 cubic yards of sand fill pumped from the Columbia River. Stabilization and drainage facilities were completed, and the topsoil, which had been removed prior to the fill operation, was replaced. More than 17 miles of drains and sewers have been laid.

The Portland-Columbia airport has a northeast-southwest runway 4,000 x 150 feet; a north-south runway 3,750 x 150 feet; an east-west runway 4,450 x 200 feet; and a northwest-southeast runway 5,600 x 150 feet. All of these are paved with asphaltic concrete, and in addition there are three paved taxiways of 3,600, 1,800, and 1,600 feet.

This $3,000,000 project includes a complete lighting system, construction of parking areas, a fence and landscaping.

Airport Design for Municipalities

A reference text of tentative standards furnished by the Civil Aeronautics Authority. Consult The Municipal Index for 1940-41, pages 525-550.

International Tractor Working on Municipal Airport, New Bedford, Mass.

•

Snow Plows for Any Motor Truck . . . In "V," Reversible and One-Way Tripping Blade Types . . . Snow Plows for Light and Heavy Tractors . . . For Highway, Street or Sidewalk Snow Removal.

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Today, when speed is vital, there is more urgent need than ever before to make early and adequate provision for snow removal. Have you a sufficient force of good reliable snow plows ready to fight when the heavy snows come?

For 33 years, Baker Snow Plows have been renowned for dependability of performance on the streets of America's largest cities, on leading state highways, in numerous Federal departments and in the nation's largest industries.

Only Bakers give you such features as sectional tripping blades, scientific moldboard curvature and compact, efficient hydraulic control. Satisfied owners are Bakers' biggest boosters. Find out why.

Ask for Snow Plow Bulletins

THE BAKER MFG. CO.

503 Stanford Ave., Springfield, Illinois

MAKERS OF

HYDRAULIC BULLDOZERS, HYDRAULIC SCRAPERS, ROAD ROOTERS, ROAD DISCS AND SNOW PLOWS

BAKER SNOW PLOWS

Street Improvements

The 6-Inch Concrete Pavement and Black Top After the Heavy Root Had Been Pulled Through at Deerfield, Ill.

Root the Street and Save the Pipe

DURING THE RECONSTRUCTION of the central section of a 60-foot highway running through the village of Deerfield, Ill., without disturbing the two outer lanes of the road, and to eliminate the danger of cracking the water and gas mains, the Meyer Construction Co. used an extra-heavy-duty LeTourneau Rooter to rip out the 6-inch concrete pavement with its 2-inch blacktop surface. The contractor was prevented from using a frost ball, a jackhammer or dynamite because of the proximity of cast iron water mains beneath the roadbed, and also since any such breakage in the center section might cause cracking in the outer lanes of the pavement which it was desired to preserve.

By using the Rooter, pulled by an RD-7 and D-8 Caterpillar tractor, the breakage was localized and controlled as to depth for quick, easy removal, under the direction of Elmer Meyer.

Don't Miss It!
American Public Works Convention
October 19-22, New Orleans

1940 Street Work in Rhinelander, Wis.

STREET CONSTRUCTION in 1940 in Rhinelander, Wis., comprised an extensive program involving much use of WPA labor. There were 26,600 square yards of grading, 23,200 square yards of surfacing, 12,015 square yards of black top laid, 6,419 square yards of concrete pavement, 5,960 linear feet of sidewalks, and 5,616 linear feet of curb and gutter.

The following summary shows the amount of work for the past five years:

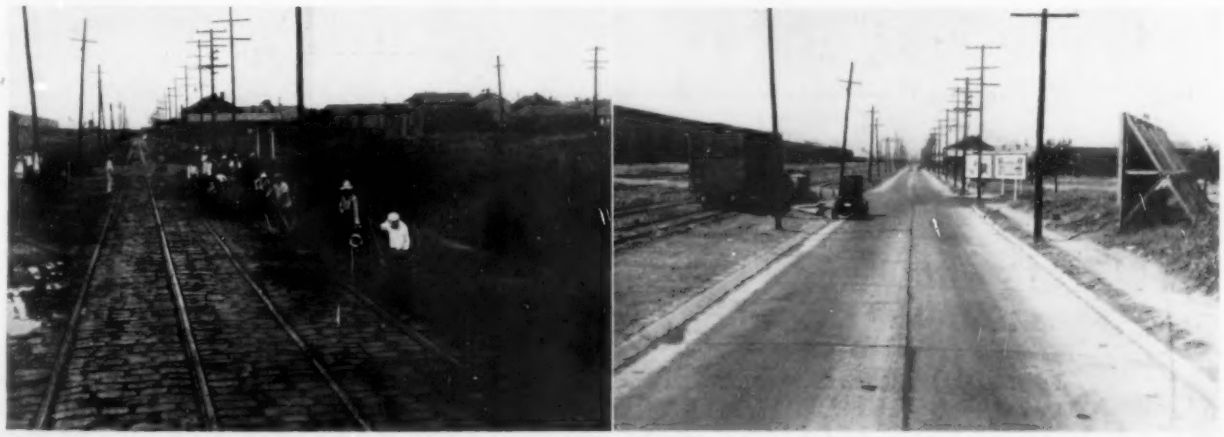
	1940	1939	1938	1937	1936
Grading, square yards	26,600	9,570	22,365	20,255	8,800
Surfacing, square yards	23,200	10,770	21,715	21,880	5,800
Black Top, square yards	12,015	13,840	22,880	19,625	0
Paving, square yards	6,419	1,312	9,427	0	2,135
Sidewalks, linear feet	5,960	8,615	9,617	2,510	3,381
Curb and gutter, linear feet	5,616	1,470	12,902	0	3,050

Concrete Replaces Old Belgian Blocks

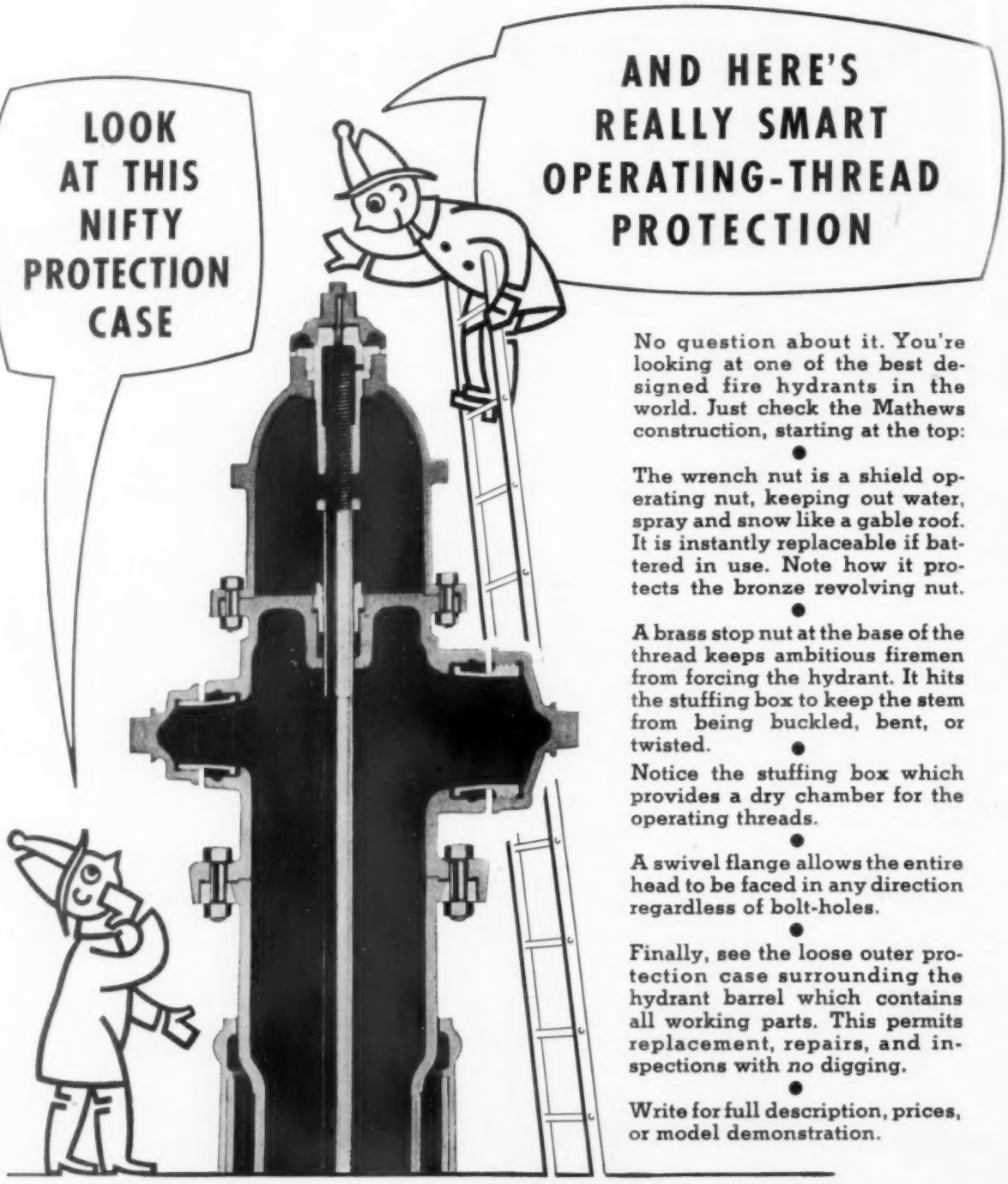
THE HEAVY BELGIAN PAVING BLOCKS which were characteristic of so many of the old streets in New Orleans, La., arrived in that city as ballast on sailing ships over a century ago and were unloaded and then tossed from the piers. The thrifty French rescued them from the mud and paved the greater part of the city with them.

Today Tchoupitoulas Street, an 80-block thoroughfare which extends along the riverfront and which has always been one of the most important commercial streets in the city as the only traffic outlet from the Mississippi River wharves, has had these blocks removed and the street repaved with concrete.

Tchoupitoulas is not the only street to lose its block paving. Of the 350 miles or more of city streets which have been built or improved by WPA in the last five years; a goodly portion originally had been paved with these blocks. The old paving blocks have now gone for further service in the building of curbs and gutter bottoms. The blocks are small enough to be fitted into place as one would lay brick, and it is seldom necessary to cut them. For a time the blocks were crushed in a giant stone crusher, and the aggregate used as a base course for asphalt surfacing. It was found, however, that the old granite paving blocks were too hard to be crushed without damage to the machinery, so this practice was abandoned. By using the old Belgian stones for curbs and gutters, the city effects a practical and important saving, since the rock quarries nearest to Louisiana are as far away as Georgia.



Tchoupitoulas Street, New Orleans, La., Paved with Old Belgian Block and Repaved with Concrete



No question about it. You're looking at one of the best designed fire hydrants in the world. Just check the Mathews construction, starting at the top:

●

The wrench nut is a shield operating nut, keeping out water, spray and snow like a gable roof. It is instantly replaceable if battered in use. Note how it protects the bronze revolving nut.

●

A brass stop nut at the base of the thread keeps ambitious firemen from forcing the hydrant. It hits the stuffing box to keep the stem from being buckled, bent, or twisted.

●

Notice the stuffing box which provides a dry chamber for the operating threads.

●

A swivel flange allows the entire head to be faced in any direction regardless of bolt-holes.

●

Finally, see the loose outer protection case surrounding the hydrant barrel which contains all working parts. This permits replacement, repairs, and inspections with *no* digging.

●

Write for full description, prices, or model demonstration.

MATHEWS HYDRANTS

Made by R. D. WOOD COMPANY

Manufacturers of Sand Spun Pipe (centrifugally cast in sand molds) and R. D. Wood heavy-duty gate valves for water works

400 CHESTNUT STREET, PHILADELPHIA, PA.

When you write for that catalog, kindly mention THE AMERICAN CITY.

Public Safety

Detecting and Destroying Bombs

By JOHN B. KEENAN
Director of Public Safety,
Newark, N. J.

BOMBS were always a problem; never more so than now, when to the arsonist, killer, and racketeer have been added the saboteur and spy.

Newark's Alien, Radical, and Bomb Squad, under Captain Frank O'Neill, had probably gone further into the study and actual handling of bombs than any other organization in the country. The study includes the examination of an extensive collection of bomb models which I have had built for us by an expert.

Our technique starts with the person who finds or sees a suspicious-looking package, valise, or overnight bag. The suspicious element is in the location, rather than in the appearance of the object. Our orders and prayers, as shown by the accompanying poster, are "Keep calm, do not touch, or handle."

The next step is the arrival of the Bomb Squad and its diagnosis of the object by means of two devices. The first is a listening device consisting of a microphone, an amplifier, and hundreds of feet of electrical conductor. The other is a powerful portable fluoroscope for photographing the innards.

Many packages are harmless. Others are physically harmless, but intended to scare. Still others are the real thing. Our comprehensive collection of models of these bad ones include the incendiary pencil carried in the vest pocket; the familiar aerial thermite bomb of 2 to 250 pounds which, setting up a temperature of 5,000 degrees F., melts its manganese jacket and scatters the metal over a large area; a thermite bomb in a small traveling bag, a high-octane timing incendiary bomb, and a sulphuric-acid bomb in a bag. Thermite makes the bomb du jour, as it ignites instantaneously, generates terrific heat that sets fire to anything. It consists of granulated aluminum and iron rust.

In addition, there are the bombs of the killer. These include the trigger bomb, the slide bomb, and the latch or hinge bomb, all of which explode on opening the lid. There are also the shrapnel bomb and the pendulum bomb and, particularly interesting, the tip bomb which goes off if the package

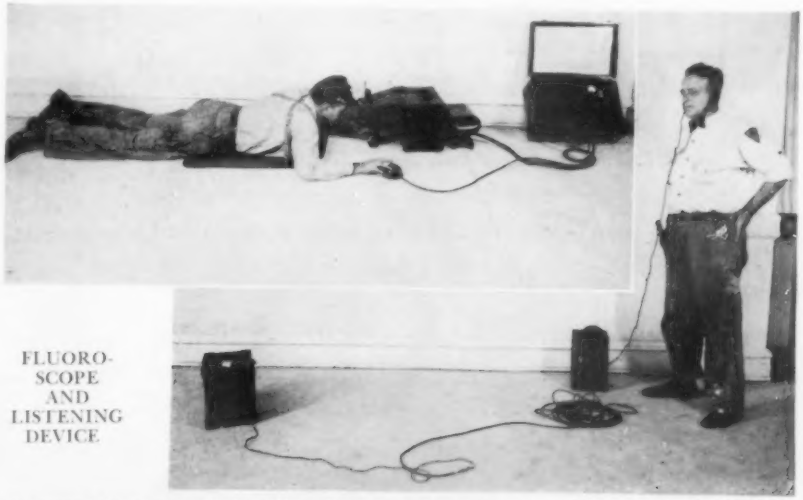
is only slightly tipped, and the plunger bomb which explodes if lifted. The pipe-line bomb is carried in a canvas container like a life preserver, to be placed around a large pipe—gas, steam, water, or electric cables. The marine bomb is fastened to a barge by rubber suction cups.

The squad is now building a trailer type bomb conveyor which is believed to incorporate the best features. A survey has been made of the vulnerable parts of the city and plans made to protect them, and all defense plants have been surveyed and the employees fingerprinted and their records obtained.

Regarding incendiary bombs dropped from the air in war, several members of our Fire Department received two weeks' instruction in July at Edgewater Arsenal, Maryland. The principal present types are the 2.2-pound magnesium bomb, 2 x 14 inches, 720 to the airplane, of which some 160 out of 1,000 start fires, the thermite bomb, the oil bomb, and white phosphorus. The magnesium bomb is extinguished by sand or by Pyrene's G-1; the fognozzle is also effective, while a stream of water hastens its combustion to one instead of fifteen minutes. Nothing will extinguish the thermite bomb, but sprinklers protect the walls of the room in which it settles. Water extinguishes the oil bomb and the phosphorus bomb used to ignite fields, brush, and timber.

This Month's Cover

THE PICTURES ON THE FRONT COVER of this issue of THE AMERICAN CITY are not from England, but are shots of run-of-mine fires in the city of Newark, N. J. If enemy wings should appear over Newark, the types of apparatus shown would be the local fire defense. The photograph of the latest-type U. S. dive bombers was courteously loaned by *Aero Digest*. These are the Douglas A-24 powered with Wright Cyclone engines, and designed for attack and special missions.

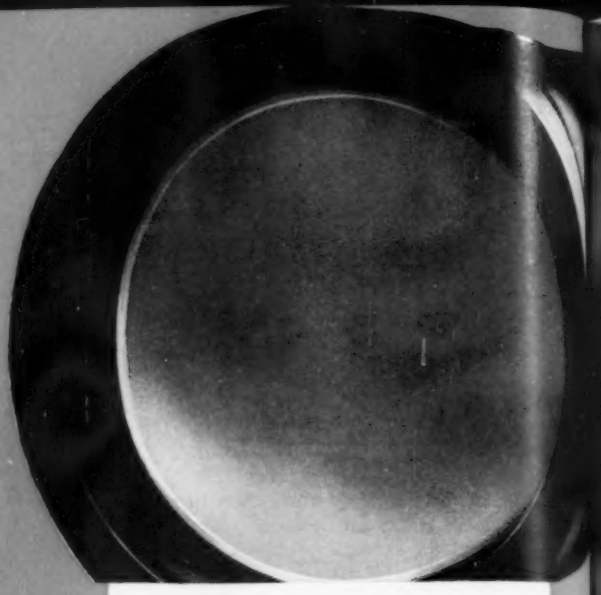


FLUORO-SCOPE AND LISTENING DEVICE

A successful technique in handling all kinds of bombs has been developed by the Newark, N. J., Police Department

100 YEARS OF USEFUL LIFE AS A STRUCTURE

IN MORE THAN 75% OF THE U. S. A.
YOU GET BOTH
with standard tar-dipped cast iron pipe



IN LESS THAN 25% OF THE U. S. A.
TO GET BOTH
use lined*
cast iron pipe

100 YEARS OF HIGH CAPACITY AS A CARRIER

WHERE TUBERCULATING WATERS MUST BE TRANSPORTED (LESS THAN 25% OF THE U.S.A.) USE LINED CAST IRON PIPE*

The areas of the United States where tuberculating waters materially affect the carrying capacity of pipe represent *less than one-quarter of the total area of the country.* If you are located within one of these areas, use *lined* cast iron pipe. You do *not* have to sacrifice the long life, low maintenance cost and salvage value of cast iron pipe in order to be assured of high carrying capacity throughout the life of the pipe you buy. The Cast Iron Pipe Research Association recommends *lined* cast iron pipe where tuberculating waters must be transported. Lined cast iron pipe is the only pipe that will have 100 years of useful life plus 100 years of high carrying capacity. Send for map which shows approximately 76% of the country where little or no tuberculation is to be expected. Lined cast iron pipe is made in sizes from 1¼ to 84 inches.

**Various types of linings are available to meet various conditions and preferences of users*

THE CAST IRON PIPE RESEARCH ASSOCIATION, THOMAS F. WOLFE, RESEARCH ENGINEER, 1015 PEOPLES GAS BUILDING, CHICAGO, ILLINOIS.

CAST IRON PIPE

PUBLIC TAX SAVER NO. 1

Vol. LVI, No. 8 The American City August, 1941

An Engineering Analysis of

Municipally Built Fire Apparatus

IT IS obvious to almost any business man that it is not economical for him to build the equipment he uses in producing the things or services that he sells. If it were, the big trucking companies would be building their own trucks. They don't. Not only do they buy their trucks, but they replace them on a mileage basis; so many miles, and out goes the truck. They have found it cheaper to do this than to chance expensive breakdowns on the highway.

A number of cities build their own fire apparatus. They do this for various reasons—usually honest ones, but in many instances reasons which have not been arrived at through reasoning.

The most innocuous case is that of the small town whose fire force includes one or more mechanics who have the pep or leisure to suggest that they build a piece of apparatus. Eventually the word goes forth that this town has built a ladder truck for $1,853 that would have cost $6,000 to buy. The cost is of course for chassis and accessories, the labor being love. Various bulletins gleefully print this, and throughout the country, officials and taxpayers presumably become doubtful of the wisdom of their policy of buying standard apparatus.

The most reprehensible case is the large city which, with no regard for the rights of private initiative or knowledge of true cost accounting, steals the expensive findings of industrial research, copycats a modern design that has cost thousands of dollars to produce, makes a few alterations in the location of hose and tools, and acclaims the new piece as an advance in the art and an achievement in economy.

For a number of years, Jersey City built its fire and police equipment in the maintenance shops of its public safety department. Said an official to the representative of a fire apparatus manufacturer: "You'll never build another piece of apparatus for Jersey City; we can build two pieces for the price of one of yours." Parades and publicity announced the tremendous economies which excluded labor costs because the shop men "would have been there anyway." The shops were manned by uniformed firemen and policemen drawing $3,000 per year. There was little room in the shops for regular repairs, which were done in the fire-houses or were postponed.

Becoming aware of the real costs, the Jersey City officials in the latter part of 1940 discontinued building apparatus and bought a 1,500-gallon pumping engine and a 100-foot aerial, and in 1941 two 1,250-gallon pumping engines, and now expect to buy one or more modern factory-built pieces every year.

The city of Toledo, which in four years has built in its maintenance shop 14 new pieces of apparatus and rebuilt an aerial, has performed a valuable service to all city governments by placing on record in THE AMERICAN CITY its thinking and action. The reason for undertaking this wholesale manufacturing job was that in the early Thirties the fire equipment was allowed to deteriorate so that there were breakdowns, failures, and general mechanical inefficiency, which also impaired the morale of the fire-fighting force. In 1936 a City Manager was chosen, a study made of the automotive equipment of the Division, and a program established. The principal policies of this program, published in this magazine in June, 1941, are repeated here. Following most of them are brief editorial discussions which, it is hoped, will be of practical value to mayors, councilmen, commissioners, city managers, public safety directors, and fire and police chiefs.

1.

Toledo was one of the first major cities to be 100 per cent motorized in the Fire Division. As a result, most of the rigs were old, even dating from 1914, and many were definitely obsolete.

Consider the quality built into a fire apparatus which lasted for 26 years and still continued to render service. Had there not been manufacturers to do the expensive research and experimental work, energetically developing new and improved pumps, engines, and ladder equipment, there would have been no modern apparatus to start copying in 1937. What city would underwrite the cost of engineering, experimental work, patterns, tools, dies, fixtures, and special machinery to produce a new and improved pump?

2.

The yearly mileage on even the busiest rigs was very low, so that at a time when the equipment became mechanically obsolete the total mileage or hours of service barely equaled a full year of use of similar automotive equipment in local commercial service.

The mileage registered on pumping engines per year is relatively low when compared with most other automotive vehicles in regular use. The speedometer might register only 1,000 miles, yet the motor might need valve grinding or some other work done. When the speedometer is connected to the motor, as is current practice on modern apparatus, a very different mileage figure is registered. The actual mileage reg-

istered when the vehicle is standing still but the motor pumping water, may exceed considerably the actual mileage on the streets. The load on the engine when operating the fire pump is greatly in excess of the load for running the apparatus on the street, and corresponds to operation up a steep grade at a continuous speed.

3.

Technological improvements in the automotive field were being made so rapidly as to render the automotive portion of fire apparatus obsolete long before the fire-fighting portion became unfit for use.

Technological improvements continue to be made at an even faster rate than heretofore. To provide fire departments with service on models purchased, the larger manufacturers have found it necessary to design their own units and exercise control of their manufacture so that parts may be kept in stock for as long as the model remains in service. Most commercial truck parts are available for service only for seven years in accordance with Federal Government requirements.

4.

Roughly, the depreciation on a manufactured 750-gpm pumper (standard in Toledo) on a 20-year basis was $625 per year, $0.625 per mile, and $2 per hour of use, the last two figures being badly out of line with accepted automotive depreciation.

Any comparison of the cost per mile or per hour of use with a commercial truck must not ignore the function of a fire engine. The ideal condition in a city would exist when there are no fires and the apparatus would never need to be used. This would involve maximum depreciation per year and obviously cannot be compared with a commercial vehicle. The fire engine is an emergency unit that must be dependable and ready to operate at any time of the 24 hours in every day of every year. Lives and property depend on this ability to operate instantly under any condition. The commercial vehicle is not designed for this dependence since no lives are lost or property damaged if the engine refuses to operate or if some other defect in the mechanism occurs. A well-engineered fire engine manufactured by one of the reputable builders not only meets the Underwriters' specification as regards horsepower and engine speeds, but, in most instances, they go far better than that. This means that the engine has that additional reserve power which gives it a longer life.

5.

Repair parts could be obtained from the manufacturer only at a considerable loss of out-of-service time, and at a cost greatly in excess of equivalent parts of standard production vehicles.

The larger fire-apparatus manufacturers have parts departments in many large cities, and parts can be supplied in 24 hours at most. A fire department distant from source of supply should keep repair parts on hand. Can parts of commercial chassis be obtained from local dealers ten to twenty years hence? Suppose a motor is discontinued, as it will be if it does not pay, then the city must use the superseding motor. Up to 1925, the standard electrical system was made by the Westinghouse Electric and Manufacturing Co.; then it was discontinued, and now Delco-Remy makes the system chiefly used. Trucks come out in half-yearly or yearly models, for commercial users find it cheaper to buy new trucks than to rebuild. To obtain parts for discontinued models, it may be necessary to go to the junk heap or to a local machine shop which can have no knowledge of the original heat treatment, and soon another replacement will be necessary. Says a prominent fire apparatus manufacturer: "I might add, from our personal experience, that when we were purchasing some commercial engines for use in certain models, we found the commercial motors required more replacement of parts than did the engines of our own manufacture. We furthermore learned, and to our sorrow, that after not so many years it was often almost impossible to secure repair parts at all, because the motor manufacturer had changed his design, and in some instances actually discontinued the manufacture of a certain series of engine."

6.

Over 50 per cent of the vehicles needed replacement and the rest needed thorough overhauling.

(See No. 9.) Why, prior to the advent of a city manager, with a shop big enough to build apparatus, was the existing apparatus permitted to run down disgracefully?

7.

The reserve vehicles were few and in such bad condition as to be almost useless.

It is essential to maintain reserve apparatus in the same good condition as the regular apparatus. In an emergency, reserve equipment may be called on to do far more work than some piece of new equipment.

8.

The amount of money then available or which might reasonably be anticipated each year was so small that it was obvious that some solution should be found which would produce greater immediate results than by purchasing ready-built equipment.

At this point it might be expected that prices would be obtained on commercial assemblies and the shop organized to maintain the equipment adequately.

9.

In making such repairs as had been possible during the past few years, it became apparent that the men assigned to the Fire Division Shop had more than ordinary skill and ingenuity in working on bodies and equipment.

The essence of an efficient or even an adequate repair shop is the availability of modern machine tools. The ordinary fire department repair shop has little enough equipment properly to maintain apparatus in service, without considering additional new equipment that must be necessary to attempt any construction program. The purchase of such new equipment to start a building program is seldom entered in the cost of the apparatus by the city and yet the cost of this equipment alone usually represents the cost of one or more pieces of factory-built equipment, depending upon the thoroughness and depth of the building program.

10.

Careful analysis of the mechanical specifications of ready-built fire apparatus failed to disclose sizes, capacities, or assembling which could not be obtained in commercial units as built by standard truck manufacturers.

11.

Analysis of service needs in fire fighting also failed to disclose anything which could not be met by standard production units properly specified.

12.

Many of the rigs built by manufacturers are assembled from standard parts which can be readily obtained in commercial truck chassis at lower cost.

It is true that commercial units can be bought which will be of a size and have other conditions that make it available for fire service. In fact, all manufacturers will build apparatus on commercial chassis if a city desires that type of apparatus. The difference, though, between such assembled apparatus as built by a manufacturer from that built in a repair shop of a city's fire department is that the manufacturer has years of experience with many cars on which he can depend in making up the finished job, while the usual fire department shop has little previous experience back of it. In this connection it is interesting to note that manufacturers of commercial trucks, almost without exception, will not build fire apparatus. Some of them have tried it, but have found the expense of servicing the equipment too high, and in addition it interfered with production because of the many small changes necessary.

13.

Other cities were successfully solving their fire apparatus problem by making use of their divisional shops to build or assemble equipment.

What is "successfully solving"? Does it mean economically solving? Jersey City does not think so. Trenton, N. J., built 20 pieces in 1928-29, but discontinued because of the cost. New York City recently tried it with a pumping

engine that cost $30,682 to build in the Fire Department shops.

The Toledo program, adopted in 1937, spent $50,007 for the equipment for 14 pieces of apparatus built in the municipal shop. Against the new equipment which has been assembled in the shop during the last four years, THE AMERICAN CITY places the standard prices for first-class standard equipment, as follows:

Built by Toledo Fire Department	*Prices for Standard Apparatus* *Unit*	*Total*
3 city service ladder trucks	$7,000	$21,000
1 65-ft. aerial ladder truck	13,300	13,300
8 750-gal. pumping engines	7,400	59,200
1 service truck	3,000	3,000
1 rescue squad truck	5,000	5,000
1 aerial ladder truck rebuilt and changed from four-wheel drive to tractor drive	2,500	2,500
		$104,000

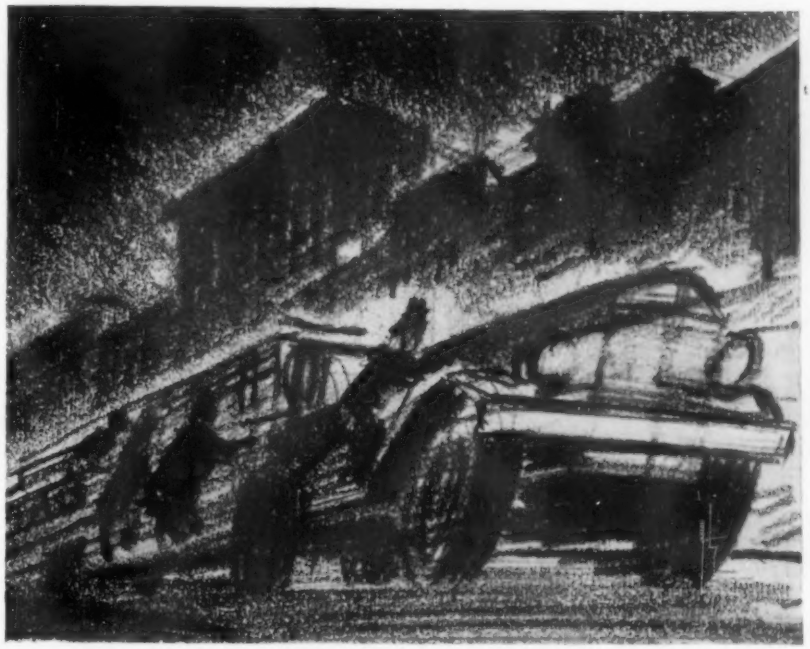
The city of Toledo and THE AMERICAN CITY have collaborated in the foregoing to provide sufficient facts to show (1) the advantages which the city sees in municipally built or assembled fire apparatus, and (2) difficulties and dangers that are inherent in this practice.

Cities seldom have the men with years of experience in designing and building equipment comparable with equipment manufacturers. The men thus engaged must necessarily lack the summation of troubles, the cumulative advice of master mechanics all over the country. They are building equipment which may not be adequately designed for the heavy operation of fire service. The city willing to sacrifice service for real or imagined economy has no one to fall back on when serious defects develop. The repair cost item has not been eliminated. A larger shop must be installed in order to manufacture apparatus. At most the only saving is sales cost, since it is accepted that municipalities building by force account find it more expensive than work performed by contract. What becomes of research? What becomes of engineering study?

The clincher for some of these economy arguments is that the shop force also responds to second-alarm fires. Just as a couple of the mechanic-firemen are putting a wheel over the brake shoe, an alarm comes, and they leave the job with probable damage by bending the brake shoe or brake arm or by dropping and springing the wheel. Again, in the midst of manufacture, a fireman reports a knock in his motor. If it is not attended to at once, tomorrow may send a connecting rod through the side of the fire engine, and this should be charged to the cost of building apparatus.

When firemen are building apparatus, they may be neglecting something else, and if they are not doing anything else except building apparatus, the cost is plenty. If this practice were general, in ten years the fire department shops would be building 1940 models.

It would thus seem that the city officials would provide their fellow citizens with better government which could show more tangible results over a period of time if the Fire Department were permitted to operate as a fire prevention and extinguishment organization, rather than as an extinguishment and manufacturing organization, handicapped by lack of funds.



COURTESY OF U. S. RUBBER COMPANY WIRE DIVISION

Fire service demands the best in equipment

Illinois Enacts Neighborhood Redevelopment Corporation Law

ON July 9 Governor Dwight H. Green, of Illinois, affixed his signature to a bill sponsored by the Chicago Building Congress to aid private enterprise in the rehabilitation and rebuilding of slums and blighted areas.

In brief, this "Neighborhood Redevelopment Corporation Act" provides that any three or more persons may form a Neighborhood Redevelopment Corporation. Application for permission to operate in a specified area must be made to a local Redevelopment Commission, set up by the municipality under the terms of the act.

Should such application be found both financially and socially feasible (after public hearing and subject to judicial review) the Corporation is given the power of condemnation. This right may be exercised, however, only after the Corporation has acquired by option, contract of sale, or ownership, 60 per cent of the property within its permitted development area. As a further aid to orderly rehabilitation, the law provides for the establishment of specified use restrictions, for developments in conformity with municipal plans, and for changes in zoning ordinances wherever desirable.

No inducement of tax-limitation is provided in the law; nor is there any restriction as to rents or earnings. Commercial use of areas to be redeveloped is limited to 10 per cent unless the Plan Commission files with the Redevelopment Commission an advisory report recommending a greater percentage.

THE AMERICAN CITY *suggests that in other states where similar legislation may be under consideration, the Illinois act be compared carefully with New York's Urban Redevelopment Corporations Law (see page 69, May, 1941, issue), and the similar act just adopted in Michigan.*

Root River, Milwaukee County, is a typical waterway untouched by human activities

Dams make visible shore lines more extensive by increasing water areas along the Milwaukee River

How a Lecture Course Saved the Shores of Milwaukee County

By C. B. WHITNALL
Secretary, Board of Public Land Commissioners,
Milwaukee, Wis.

SOME years ago, more than thirty, a small group in Milwaukee was attending a course of lectures on Monday evenings. As usual, those who came the greatest distance were always early. It was these few "early birds" who became acquainted and discussed current topics until lecture time.

One evening this group became interested in the remark: "What a pity it is that cities like Milwaukee destroy their contours, attempting to work out as many salable lots as possible, grading the high spots, filling streams, cutting trees, destroying the natural landscape in every way, and then platting into checkerboard squares — and years later the yearning for natural influences induces them to acquire a portion of the land thus destroyed, for a price ten times its original value, and develop an artificial park."

The question was asked: "Why not look around and rescue some of the desirable areas surrounding us that are still unspoiled?" It was explained that that would be county land under the jurisdiction of a different government and could not be acquired by the city. The Legislature was then in session, and desired legislation was enacted creating county park commissions. The County Board of Supervisors appointed the first County Park Commission; and in recognition of this service to their community by a few members of this lecture course, the President of the County Board asked that they assist him in selecting the Park Commissioners. And so the first County Park Commission was composed of interested, intelligent citizens without political obligations.

Other Cities Please Copy!

The remarkable achievements of the City and County of Milwaukee, Wis., in acquiring and restoring or preserving their lake shore and stream valleys can hardly be wholly unknown to any reader of* THE AMERICAN CITY.

But the accompanying story, as told by Mr. Whitnall at the annual meeting of the American Shore and Beach Preservation Association, at Cape May, N. J., on June 20, 1941, gives facts as to the inception of these projects, their development and their present status which not only are dramatic reading, but ought to spur many another municipality and county to similar public service.

Who will accept the challenge?

** See, for example, the issue of August, 1937, pages 45-47.*

Land Acquisition Starts

In due time there was a very moderate annual income provided for the Park Board. The first purchase of land was the remnant of a plat—that which was left after the landowner had sold all the lots then salable—the lower end of three ravines, the drainage from which flowed into the Menominee River. "The man on the street" considered it a queer selection, possibly because the owner was glad to get rid of it. Today, this park is one of the most cherished neighborhood parks.

Later on, four pieces of land fronting on Lake Michigan—high bluffs of clay, some ravines and springs, and a very fine stand of beech trees—were purchased. This

became known as the County Park. It was placed in the care of one man, who still remains in that position.

A few years later there appeared a County Park Map. It included every bit of natural water that had not suffered what may be called civilized vandalism. Although Milwaukee County is about the smallest county in Wisconsin, there were mapped 84 miles of watercourse parkways, taking in every stream, besides outlines for other parks. The map included the city of Milwaukee with its established parks, while the whole of the Milwaukee County lake shore will be preserved as a parked way. These streams were little known, and none of them apparently appreciated. The land had little or no appraised value. The land beyond the parkways becomes desirable for homes, and for this reason we do not think of paying for land required for parkways from owners of large holdings.

These maps were hung up in public offices but at the time were very little understood. The county government had not committed itself to the plan; nor did the cities or villages.

After a few years, people were surprised to learn that the first two miles of parkway had been completed on the Menominee River—quite a small stream to be called a river. The people became interested and flocked to see it. Of course, the landscaping increased the visible water area by invisible dams at places. In other words, the shores were more extensive. A few appropriate plantings soon had Nature functioning. The location and course of the driveway is calculated to direct the vision of the people. The County Board of Supervisors, receiving encouraging reports, were moved to increase the size of the park budget. The Park Board, gratified by the public interest evidenced, worked on plans in advance of their financial ability. However, each time another unit was accomplished, the public approval induced extended planning for the accomplishment of the great plan.

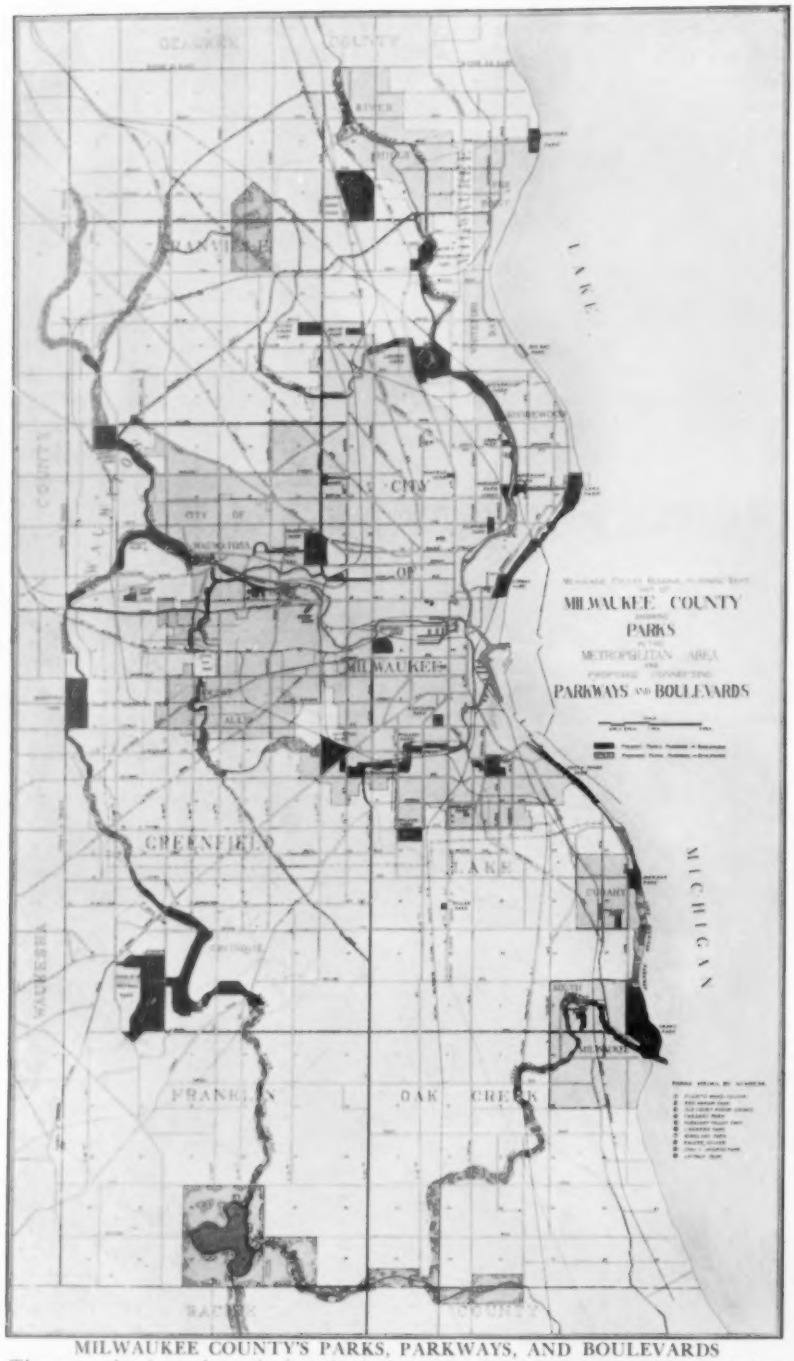
It happened a few times that the landowners did not take kindly to the development. Negotiations with them were promptly dropped. With 84 miles of parkway to extend the natural formula for good living, there was no time to be wasted on the landowner whose appreciation was below par. But later on, the dissenters came back meekly, offering their belated cooperation.

Later on, when the depression induced our Government to put men to work, and Washington found that we had plans ready, Milwaukee was favored in both CCC and PWA grants, resulting in accomplishing one unit after another, until we are now ten years ahead of our original expectations.

Preserving the Stream Valleys

These lands desired for our parkways have scarcely any value for a farmer, according to his appraisals of natural influences. However, he has learned that these parkways are not only beautiful in themselves but save large expenditures for storm sewers. They are preserving Nature's process. They are enlarged

Milwaukee's Scenic Lake Shore Parkway, Looking North Along Lincoln Memorial Drive



MILWAUKEE COUNTY'S PARKS, PARKWAYS, AND BOULEVARDS
Those completed are shown by heavily shaded areas; those proposed, by lighter shading

or broadened shores. It has taken Nature thousands of years to encourage the vegetation along these surface drains that have gradually changed the contours, enabling plant life to cover the slopes and prevent erosion. The stream valleys have been the fundamental factor in the development of our forests. They should never be destroyed.

Our state of Wisconsin has made provision under zoning power to "regulate, restrict, and determine the area along natural watercourses, channels, streams and creeks in which trades and industries and the location of buildings for specified uses may be prohibited." The adoption of an official map by the County Board is authorized; "which shall show thereon the natural watercourses, channels, streams and creeks" and the areas along them which may be restricted.

While this official map is only about half complete, we are endeavoring to secure for all the people the benefits that should accrue to all the land by virtue of having conserved these miles of shore of lake, rivers, creeks and their branches as parks, and we are now preparing a master plan for the subdivision of all the lands between the several valley parkways along the lake shore and surrounding other parks. We are doing this regardless of ownership.

Conserving God's Country and Humanity

It must be obvious that comparatively few of these lots will be level. They will be variable in size. There will be numerous culs-de-sac in each plat or an occasional loop. The drives to be used as park drives usually are. No sidewalks will parallel them. The few walks required will be short cuts and apparently cross-lots. There will be an occasional parking lot to accommodate visitors. All drives are to reach a public artery, thus avoiding cross traffic from other areas. The so-called subdivisions will be park-like in themselves. The houses will appear as being in a park. The people, particularly the children, will be living on Mother Earth.

We are seeking to conserve not only God's Country but Humanity.

To all appearances, this urbanization of the county's domain will appear to be simply an accretion to the now existing cities, and every possible care is exercised to have the county's development blend with the city. Every time a plat is prepared for some subdivision, it is taken by our Regional Planning Department over to the City's Planning Department for O.K.

City and County Relationships

A few years ago, when we were contemplating this development, we felt that it would, if generally appreciated, induce decentralization of the city. However, the automobile has aroused the intuitive sense of the people of every large city; so that, in place of inaugurating the decentralization move, we find ourselves better prepared for it than most counties. In place of our luring the people, we are being

(Concluded on page 79)

Million-Dollar Improvements to Everett Water Supply

Rapid Expansion of Everett, Washington, Industries and Air Base Necessitates Increased Water Facilities

Driving Sheet Piling for Dike Core at the Lower End of Lake Chaplain for the Everett Water Supply

SUPPLYING Everett with sufficient water to meet normal needs plus the increased demands of stepped-up industries and airport construction calls for vast improvements to its supply system. These improvements, involving more than a million dollars of expenditures, are now going forward rapidly. The present water supply of Everett is obtained from Lake Chaplain, which is located approximately 25 miles east of the city limits. Fed by natural springs and a 7,000-foot diversion tunnel from the Sultan River, the lake's present storage capacity of 1,450,000,000 gallons is being increased to 4,500,000,000 gallons.

More Water Needed

Water needed by the city of Everett, its pulp mills, canneries, and the army air base at Snohomish County Airport will call for an increase this summer of some 20,000,000 gallons per day over the 65,000,000 gallons now being used. The increased storage capacity of the lake plus improvements being made to the supply lines to the city will make it possible to supply 110,000,000 gallons per day, with sufficient storage to carry over the summer's dry period and the corresponding low flow in the Sultan River. Work on this large undertaking was begun in July of 1939 with funds provided by WPA in the amount of $879,141. Everett is contributing $237,702 for equipment, materials and other non-labor costs not met by the WPA allocation.

Dikes and Dams

The capacity of Lake Chaplain is being increased by the construction of two dikes or dams, one at each end. The main dike at the south end of the lake is being built to a maximum height of 44 feet. It will be 815 feet long. The smaller dam at the north end of the lake will rise to a height of 18 feet.

In the construction of the south dike, heavy steel sheet piling was driven down to hardpan to prevent seepage. Poor core material was removed and replaced with proper core material. The building of this dike required 60,000 cubic yards of excavation under dike core, the hauling and placing of 150,000 cubic yards of rock blanket for the dike, and 1,010 cubic yards of solid rock flume excavation.

New Supply Line

Improvements to the supply line from the Sultan River to the lake have been completed. A new wood-stave pipe line was required to step up the flow into the lake. The laying of 2,150 linear feet of 60-inch pipe, requiring 10,000,000 board feet of cribbing and 6,500 cubic yards of trench excavation and backfill, and some 3,000 cubic yards of rock riprap on the Sultan River, was included in this operation.

The installation of approximately 33,000 linear feet of new 28-inch wood pipe at various locations along the supply system is now going forward. More than 600,000 cubic yards of excavation is required, of which 325,000 have been completed. Other operations in-

Laying the 60-inch Wood Stave Pipe from the Diversion Dam on Sultan River to the Tunnel Carrying Water to Lake Chaplain Storage, Everett Water Supply

volved in the installation of new wood pipe include the moving and resetting of 50 air valves, and removing 20,000 linear feet of old 28-inch wood stave pipe.

Headquarters for the reservoir superintendent will be constructed at the south end of Lake Chaplain and will require the clearing and grubbing of one acre of ground, and the construction of a house and a 5-cubic-yard septic tank. Construction of a telephone line with a total length of 91,000 feet, now 50 per cent complete, will provide communication from the lake headquarters to Everett.

New Distribution Reservoir

Plans also call for the construction of a 20,000,000-gallon reservoir in Everett. This will require the moving of some 440,000 cubic yards of material in excavating and grading. Over 20,000 cubic yards of trench excavation for pipe-line changes and overflows also will be required. Construction will entail the use of 30,000 cubic yards of reinforced concrete and the laying of 4,200 linear feet of 4- and 6-inch concrete pipe; installation of a new valve-house and equipment; pipe-line changes and the laying of 1,500 linear feet of 4-inch overflow pipe line.

Improvements to the tunnel from the river to the lake include the laying of a reinforced concrete floor requiring 1,000 cubic yards of concrete and 5,511 cubic yards of precast wall and arch lining with reinforced grouting.

Road Construction

The construction of 20 miles of 20-foot gravel roads is necessary to accommodate the heavy equipment used in building the dams and reservoir and to haul equipment and material for building and laying the pipe lines. The road building requires clearing and grubbing of 50 acres, 180,000 cubic yards of grading and excavation, 1,002 linear feet of 12-inch concrete culverts; 105,600 linear feet of sloping and ditching, and 10,000 cubic yards of gravel surfacing.

These roads will be left intact, after the completion of the water system improvements, for purposes of inspection and maintenance and to allow the people from surrounding communities to use the beautiful country of the watershed for recreational purposes. Additional plans to improve this area for recreation call for the construction of several miles of trails, camp tables and other park facilities.

Municipal Repair Services Get Priorities

TO assume continued operation of essential public services and industries which otherwise might have to curtail because of inability to secure needed repair and maintenance parts, Administrator Leon Henderson of the Office of Price Administration and Civilian Supply on July 1 promulgated an allocation covering such items.

The program covers railroads; street-railway, subway, elevated, and interurban lines; commercial airlines maintaining regular scheduled service; commercial operation of motor-buses—local, interurban and interstate; shipping—including ocean, lake, river and canal commerce; pipe lines—oil and gas; commercial operation of motor trucks; highway maintenance; telephone communications; telegraph communication; radio commercial communication — including commercial broadcasting; electrical energy production and distribution; gas production and distribution — manufactured and natural; water production and distribution; sewer service; petroleum production and refining; food processing and storing; farm equipment employed in farming operations; mining and quarrying; coke converting; metallurgical plants engaged in the production of raw materials; production of chemicals; protective services—fire and police; research — industrial and academic; hospitals, clinics and sanatoria; public buildings, institutions, schools, and parks.

The program provides that such materials and equipment shall be allocated prior to all other civilian requirements and prior to defense requirements to the extent consistent with the defense program as determined by the Office of Production Management. Administration and enforcement of the program will be carried out by the OPM.

200,000 Civilian Organizations to be Surveyed

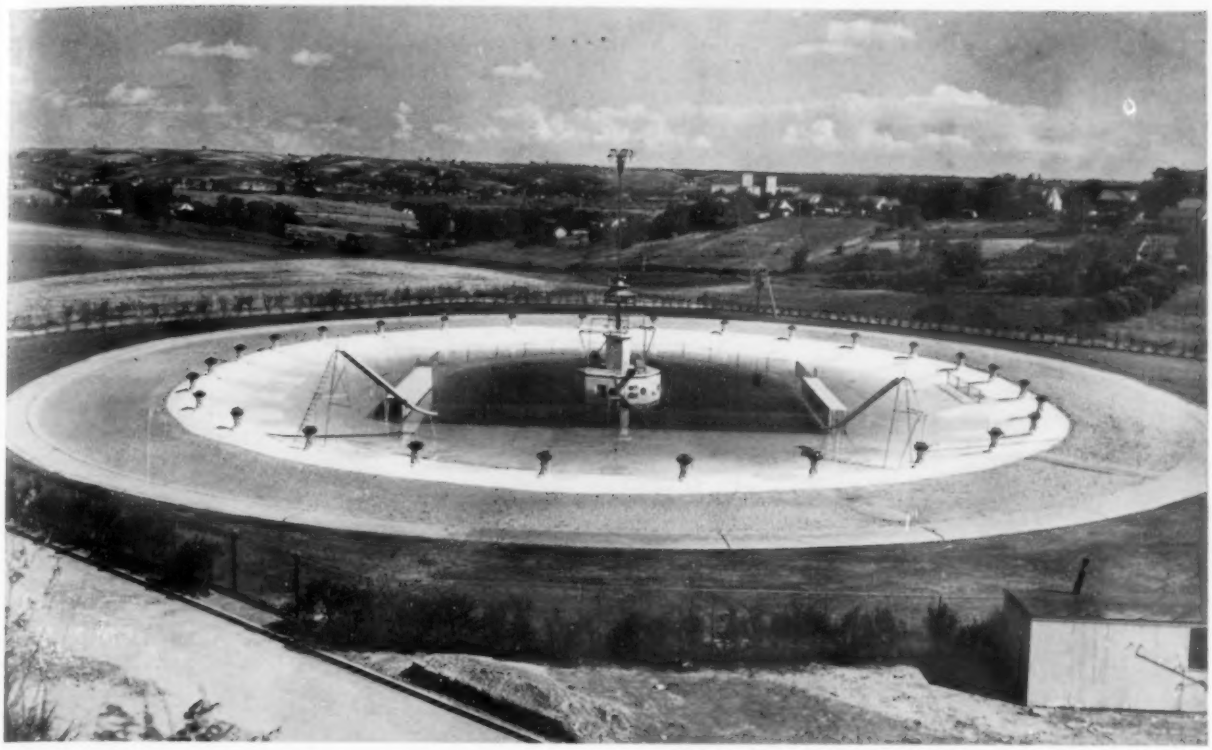
MORE than 200,000 national, state and local civilian organizations with memberships of 50,000,000 individuals will be surveyed and cataloged by the WPA for the parts they can play in home defense, Howard O. Hunter, Commissioner of Work Projects, announced on July 9.

The project will provide basic information for programs of the Office of Civilian Defense, under the direction of Mayor Fiorello H. LaGuardia of New York, and other agencies. It is now being conducted by the WPA Historical Records Survey under the general supervision of Mrs. Florence Kerr, Assistant WPA Commissioner in charge of Community Service projects, and assistant to Mayor LaGuardia in the OCD.

Information regarding all civilian organizations will be obtained on specials forms by project workers of the Historical Records Survey. These records will become a national master directory in punch card form. When the OCD is about to inaugurate a particular activity—from consumer protection to air raid warden services—the punch cards of suitable organizations can be assembled automatically for any or all states. Similar lists will be retained in each state.

The index will include general civic organizations, service organizations, welfare and charitable groups, auxiliary religious groups engaged in service work, chambers of commerce, national and state headquarters of labor unions and city-wide trade councils, Parent-Teacher Associations, patriotic societies, professional associations, home demonstration clubs and farm organizations, alumni groups, motorists' clubs, youth organizations and historical societies.

Purely social clubs will be omitted. While churches will not be listed, indexes of such organizations have already been compiled by the Historical Records Survey and are available.



Seashore Pool in Sioux City

By KEYES G. GAYNOR
City Engineer, Sioux City, Iowa

TO demands of the residents on the North Side of Sioux City for a swimming pool in their community, and to demands of sport fans for a pool in which regulation aquatic events could be held, D. A. Murphy, Commissioner of Parks and Public Property, and the other city commissioners, decided to build in Leif Erickson Park a swimming pool that would answer both requirements. As there was insufficient money in the regular Park budget, it was decided to finance the pool by revenue bonds, secured entirely by the earnings.

After making a study of the various types and kinds of swimming pools, with an eye to earning sufficent revenue to liquidate the bonds in a reasonable period, it was decided that the Hunter type pool came the nearest to being the solution. Our new pool is 180 x 160 feet and completely surrounded by a sand beach 25 feet wide.

One of the most popular features of the Hunter pool is this sand beach, where often there are more people than in the water. The special feature of the beach is that the sand can be kept clean. The sand is not laid on the ground but on a concrete trough with bottom drains protected by sand traps. Chlorinated water can be distributed over the whole beach and drained off, leaving the sand pure and clean. The beach, therefore, is much cleaner than a natural beach.

Another feature of this pool is that the deep part is in the center, where the water is 9 feet deep and completely surrounded by a Stewart iron fence. Access to the deep water is through narrow gates, and it is necessary to go through these gates and swim to the center island in order to find a place from which to dive. Space is provided for swimming races. The platforms are 75 feet apart, thus making it possible to hold swimming races in accordance with association rules.

American Bacharach pumps move all the water in the pool to the pressure filters every eight hours. In passing through the filters, the water is treated with aluminum sulphate through a dry feeder, and also with chlorine equipment of Wallace & Tiernan Co.

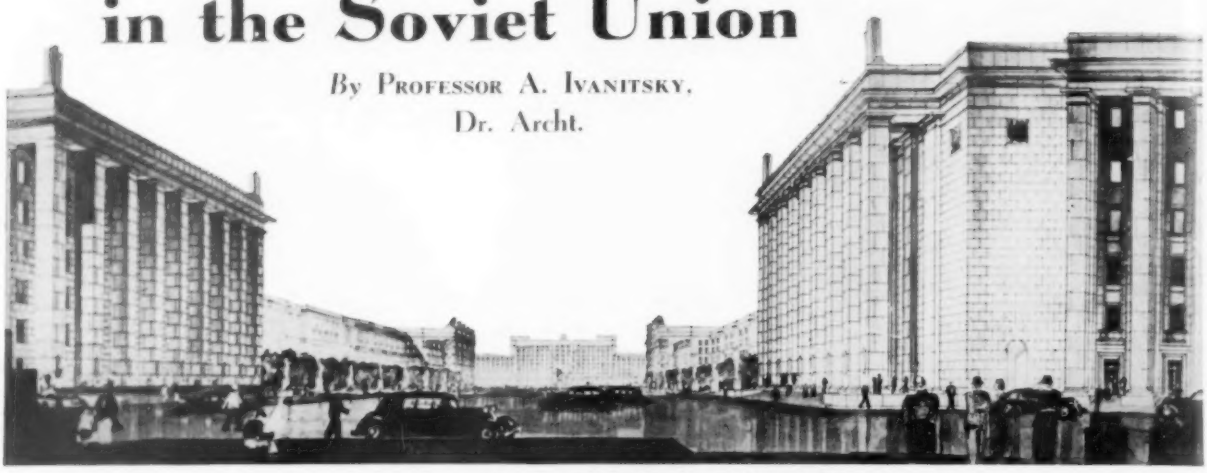
A public-address system is so arranged that the loudspeakers can present radio programs, play records for special events, or amplify speeches through the microphone.

Surrounding the pool are decorative vases of flowers and colored lights. Capital Stage Light machines play colored lights upon the fountain discharging from the top of the central tower. The central tower, which supports diving boards, lights and canopy, and the fountain, goes down into the bottom of the pool. In the lower part of this tower there are Westinghouse underwater lights, so that at night it is possible to see the swimmers in the pool. All this adds to the attraction of the pool at night. Recreation Equipment Co. furnished diving boards and slides.

The bath-house is equipped with a slat floor so that the outside air rises through the bath-house floor and discharges at the top.

The Development of City Planning in the Soviet Union

By Professor A. Ivanitsky, Dr. Archt.



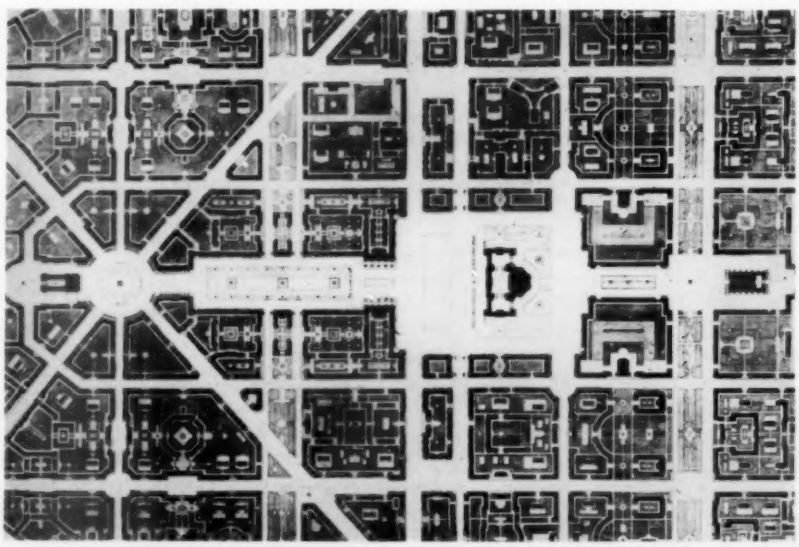
Perspective of the New Centre of Leningrad, Facing the Building of the Leningrad Soviet

CITY planning became a matter of vital concern in the very first days of the Soviet Union. At the height of the revolutionary events of 1918-19, groups of specialists in Moscow and Petrograd, including eminent architects, were engaged in the planning of these two cities. Tense work proceeded in Moscow in the projecting of big power stations and industrial settlements attached to these stations. Although available forces and means were extremely limited, these settlements were built up after the type of modern townlets, well architectured and with commodious and comfortable housing for the workers. All that Russia had known of such housing was what could be gleaned from foreign periodicals and other publications. With slight modifications here and there, the main type of housing structure and the methods of planning towns and settlements followed the styles accepted in the leading countries of Europe and America.

By 1926, when the period of restoration had drawn to a close, the construction of numerous settlements was under way—in the Baku and Grozny oil fields, in the Donbas coal fields, in the central regions and other large-scale industrial districts, and in some places nearing completion. Work was likewise proceeding on the planning and reconstruction of Baku, Tbilisi, Kharkov, Minsk, Rostov-on-Don, Ivanovo-Voznesensk, Tver, and several other big towns and cities. With small exception, all the projects being drawn up at that time were fully feasible and concrete. The general plan was developed on the basis of the existing network of streets, the territory was divided into zones, industrial districts were specially improved, the residential districts enlarged, a system of parks formed, public squares, main thoroughfares and embankments in all these places improved and given definite form.

Municipally Owned Land

An important point to bear in mind here is the great advantages and facility for this work resulting from the unhandicapped disposal of the land, which is the general property of the people, and the free utilization of big units of real estate which had been municipalized in the towns and cities of the Soviet Union. Thanks to these conditions, Tbilisi readily found solution to the most difficult problem of laying out a new avenue linking the center of the city with



Plan by the Leningrad Architectural Projecting Office for Building up the New Centre of Leningrad

the former outskirts; by this means Baku acquired a magnificent new embankment with a wide ribbon of greenery planted along the entire length of the town's marine front. Several streets in Baku, formerly pressed in by a conglomeration of commercial buildings, have been widened into spacious avenues, and broad, convenient roads have been laid to the suburbs of the town, which are situated on the hills, and the eminences themselves have been built up to form new, well-arranged districts. Tver, now Kalinin, has found solution to its involved problems of urban improvements—in particular, joint sewerage with its suburban textile mills and the building-up of housing districts beyond the city precincts. Similar difficulties were easily overcome in Ivanovo and other towns.

The vast development of industrial construction from 1928 onwards, likewise brought up the main task of planning work—all this determining broad measures for the reconstruction of a number of towns and cities and for the arrangement of large urban-type settlements.

The Legislative Framework

Legislation on the planning and building-up of towns and cities was established during the period of the First and Second Five-Year Plans for the development of the Soviet Union; architectural-planning boards were founded, under the republican People's Commissariats of Municipal Economy; architectural-planning departments were set up at the City and Regional Soviets; state institutions and trusts were established for the planning and building-up of towns and cities; and regional planning and regional projecting institutions were founded in Moscow, Leningrad, Gorky, Rostov-on-Don, Sverdlovak, Novorossiisk, and Khabarovsk. Besides projecting work, these institutes and trusts engage in survey and research investigations on the spot. The federal law of 1933—On the Drafting and Approving of Planning Projects and of the Socialist Reconstruction of Towns, Cities and Other Inhabited Centers of the U.S.S.R.—makes obligatory the drafting of planning projects, and demands the consideration of local conditions and of the district and general state means of transport.

Scientific institutes were likewise founded during this period—the Academy of Architecture, with its Institute of Municipal Construction — and the Academy of Municipal Economy, with its planning department and experimental workshops for the planning of towns and cities. An administrative-technical institute of city architects was also founded—of vast importance for the practical accomplishment of the reconstruction of towns and cities. The special architects' colleges and institutes in the large centers of the country—Moscow, Leningrad, Kharkov and Kiev—train highly qualified specialists in this sphere—planning architects, or, to be more exact, municipal construction architects.

"Giprogor"

"Giprogor" (Russian abbreviation for State Institute for the Projecting of Towns and Cities), founded in 1928-1929, is one of the biggest projecting organizations in the Soviet Union. It elaborated the projects for the replanning and construction of 80—mainly large — towns and cities; in many cases this work included the projecting of housing construction and monumental edifices in these towns, as well as municipal structures. Its contribution in the construction of hydropower stations and in the technical and economic reconstruction of the greatest waterways of the Soviet Union took form in the planning of 26 towns in the area of inundation on the Volga, which involved complicated anti-flood measures or entirely shifting towns to other spots. The works of Giprogor embrace the most diverse cities as to significance and natural conditions; among them towns calculated for a population of over 500,000, and others for an estimate of one million.

"Gorstroiproekt"

This Russian abbreviation of City Construction Projecting Office signifies one of the department organizations

General Plan by the State Institute for the Projecting of Towns and Cities for Construction of Yerevan, Armenian S. S. R.

for the projecting of new construction works; new towns and settlements at the industrial enterprises which are arising in all parts of the Soviet Union. It has provided over 100 projects for planning inhabited centers, mainly in newly opened-up districts, in virgin spots or on the sites of former small villages and tiny settlements of hunters or fishermen.

The smallest of these towns is calculated for a population of 50,000; some, however, for 300,000, and one for 450,000. All are being quickly built up and speedily nearing the projected number of inhabitants, developing concomitant with the general plan of the national economy.

"Mosoblproekt"

The Moscow Regional Planning Office is an organization of the trust type, and incorporates three departments: one for projecting housing and public buildings; another for planning towns and settlements; and the third

"Giprogor" Project for the Planning of Stalingrad

for projecting sanitary-engineering structures in towns and villages. It furnished the projects for reconstruction, replanning, enlargements or new planning for almost all the towns and big settlements in the Moscow Region. It also undertakes the planning and reconstruction projects for towns and cities outside the Region. One of the biggest of these is the planning of the suburban zone of Moscow, covering 4-5 million acres including 2,000 inhabited spots of various sizes and importance.

"Giprograd"

Among other kindred institutions, of equal importance, "Giprograd," in Kharkov, is a state projecting institute with a well-organized body of specialists, who have supplied projects for the reconstruction of no less than 30 towns and cities of the Ukrainian S.S.R.

Crystallizing Ideas of Planning

The initial period of work of all the bureaus witnessed extremist conceptions of municipal construction, with formal treatment of "line-cities," "dispersion-cities," and "spot-cities," or gigantomaniac colossal cities. Then came the pseudo-scientific conception of stupendous communal houses as imperative for the socialist organization; or of individual cabins, or cottages, even transportable or dismountable. A more restrained attitude prevailed among the workers in the state projecting organizations, and accumulated experience gradually overcame the errors and mistakes of the early period, with the growth of wholesome economic, social-welfare and hygienic foundations.

The planned organization of the entire national economy makes it possible to predetermine the profile and features of towns and cities, the composition and growth of their industries, the development of educational, scientific, cultural and administrative buildings, the growth of population, the required residential accommodations and public-welfare institutions; also freight turnover, volume passenger traffic, means of transport, and the requisite territory by districts at the various stages of the town's development.

In the reconstruction and new planning of towns and cities of the U.S.S.R. the problems of entity and architectural landscape of the towns and cities occupy the important place due them, linking them with the entire complex of municipal construction measures. The plan of work implies a solicitous attitude toward the cultural habits of the population, its national art, its folk art, and its ancient monuments.

At certain phases of development, the work of projecting institutes of the type of Giprogor, and of the large regional projecting office, such as Mosoblproekt, overlaps the undertakings of local urban architectural-planning bureaus. The bigger cities—Moscow, Leningrad, Kiev, etc.—effect all the projecting of reconstruction in their own bureaus. They avail themselves of central or regional organizations for working out the general plan of reconstruction or the new planning of the town, including surveying, investigations, technical schemes for the engineering work in preparing the territory, transport, etc.; also the setting-forth of economic groundings for the prospective development of the town or city. The detailed blueprints are elaborated by the local architectural-planning bureaus on the basis of the general projects.

The planning of medium and small-sized towns is effected by the big projecting organizations, which, in such cases, must take into detailed consideration all the local aspects and conditions.

Planning the Whole Project

The general plan is usually accompanied by a project of the first group of undertakings in the reconstruction, thus showing the cardinal structural elements which influence the entire compositional entity. On this basis a systematic selection of building sites is made, taking into consideration wear and tear, the least possible demolition, and other features, and the role of the structures in the entity. This results in the formation of a land fund of

(Concluded on page 81)

Project for Building Up the Town of Zelenodolsk on the River Volga, Tatar A. S. S. R

Transforming Locust Street in Evansville, Indiana

Street-Railway Area Repaved When Buses Come, Using Old Brick Crushed for Penetration Base

N.W. Third Street, Evansville, Ind., during the removal of street-car tracks. The rails are still in place in the intersection

THE removal of street-car tracks has become a part of the regular work of most municipal street departments owing to the shift from electric-driven cars operated on rails to electric or gasoline-engine powered buses by the various privately owned utilities. Evansville has been going through this transition for several years, but the actual removal of the tracks has retarded the program of resurfacing the center area of the streets. At present, WPA projects are handling this phase of the work, which is quickly followed by the construction of a new base and a new surface.

The original street-railway franchise in Evansville required that the utility company pay the city a fee of $10,000 a year for 10 years for the maintenance of the tracks and paving between the rails, all the work being done by the city, thus placing the responsibility on a single group. On most of the streets the paving for one foot outside of the outer rails and all the area within was paved with brick, while the area outside of this, to the curb line, was paved with sheet asphalt.

When it came time to remove the street-car tracks, it was decided to use the vitrified brick as aggregate for a bituminous penetration base underlying the new sheet asphalt surfacing to be laid in this area.

Following the removal of the rails and the cleaning-out of the area between the tracks, the brick which had been removed and crushed as another WPA project, was brought back and spread in a course varying from 4 to 6 inches in depth and penetrated with 1 gallon per square yard of cut-back asphalt. Then the surface voids were filled with limestone chips and penetrated with cut-back asphalt at ½-gallon per square yard. A similar course of chips with ¼-gallon is placed on top as a seal course.

On this base a 1½-inch hot-mix binder was placed under contract, and a 1-inch sheet asphalt surface course was laid to maintain the crown established at the sides of the streets and with a minimum break at the joint between the new and old asphalt pavement. Both the binder and surface courses were placed with an Adnun black-top paver and rolled with a 10-ton Buffalo-Springfield tandem roller.

Brickbats used as a base for a penetration course where the rails have been removed

This work was done under the direction of Charles E. Day, City Civil Engineer, with William J. Wells, Assistant Engineer in Charge.

$94,977,750 *Appropriation for Airport Construction and Improvement*

FOR the fiscal year which began July 1, 1941, an appropriation of $94,977,750 has been authorized by Congress to the Civil Aeronautics Administration for airport construction and improvement. It is expected that this substantial sum will be supplemented by about $42,000,000 in WPA work. Of the CAA appropriation, $33,500,000 will be used for completion of the 250 airport program begun during the 1940-41 fiscal year; the remaining $61,477,750 being allocated for improvement work on 149 additional airports to be selected after surveys now under way.

As in the 1941 program, CAA Administrator Donald H. Connolly announces that:

The Federal funds will not be spent for land or buildings, but only for improvements of actual landing areas. Local political subdivisions will be required to provide suitable publicly-owned land, to construct whatever buildings are deemed necessary and to maintain and operate the airport. Federal funds will go for grading and drainage, paving of runways, etc.

As in the current program, also, a variety of construction methods will be employed. In some cases engineering will be handled by the Army Engineer Corps on projects let by contract; in some cases CAA engineers will provide technical services on contract jobs; while in still another category, CAA funds will be used to supplement WPA airport projects.

Public Housing as Seen by a Former Chamber of Commerce Manager

By JAMES T. DANIELS

Manager, Jacksonville Chamber of Commerce, November, 1929-January, 1941; Now Member of The Housing Authority of Jacksonville, Florida

IN the May, 1937, issue of THE AMERICAN CITY, page 97, covering the completion of Durkeeville, a PWA Housing Division project, in Jacksonville, it was stated: "The future of low-rent housing in the state of Florida is largely dependent upon enactment of suitable Housing Authority legislation in the next session of the State Legislature." The 1937 session did enact the necessary legislation, and Florida now has in public housing for low-income families, occupied or under construction, an investment of $24,000,000, of which approximately $6,000,000 is in Jacksonville.

The Jacksonville developments include Durkeeville, 215 Negro units, now under local Authority management; Brentwood Park, 600 units for white occupancy, of which 230 units have been occupied for nearly two years; and Jefferson-Madison Homes, 708 units for Negroes, now under contract for demolition and construction.

High Municipal Costs in Slum Areas

The pros and cons of public housing have been well publicized by its proponents and opponents, the latter appearing the more vociferous, as is the case with anything new and unproven. But now there are certain experience-facts which refute much that has been previously said in opposition. In the average residential area of Jacksonville, it was found that the annual per square-mile cost for police and fire protection was $16,200, with a tax return of $131,200. In the slum areas, the police and fire costs averaged $113,500 per square mile, with tax collections of only $58,300. It is self-evident, with only two items of municipal expenditure considered, that slum areas do not pay their own way. It is also evident that there must be a certain tax excess from the other areas of the city to make up for the tax deficit of the slum dwellers. To substantiate these figures, I quote from a report of the Crime Justice Commission, a body appointed by the City Commission of Jacksonville. It states: "In one slum area, called Hansontown, the net cost of municipal services exceeds the net income from taxation by $40,000 per year. This is a net loss to taxpayers as a whole." This area, now under demolition to make way for the Jefferson-Madison Homes project, is one of the largest single areas ever attempted for a slum-clearance program in the United States.

It has also been found that families with the lowest incomes generally pay the highest proportion of their income for rent. Families with an income of $4,000 per year average 15 per cent of that income for housing; an income of $2,000 requires 25 per cent for rent; an income of only $1,000 per year re-

SCENES IN THE HANSON AREA, JACKSONVILLE, FLA., NOW BEING DEMOLISHED FOR THE CONSTRUCTION OF THE JEFFERSON-MADISON HOMES

Overcrowding, insanitary dwelling facilities, unpaved streets without sidewalks, tend to create slum conditions in any area

Is there any reason to believe that houseworkers from this area do not bring disease and filth into the better homes of the city?

quires 30 per cent for living quarters, such as they are. With any reasonable standard of housing, it is not possible to scale down the rent paid pro rata with income earned, which means that the rent item falls most heavily upon the low-income groups.

Benefits from Public Housing to Taxpayers and Private Business

Private enterprise, whose basis of existence depends on the ability to earn a profit, can furnish adequate homes to those low-income families only at a loss. Then, what can be done? It has just been shown that it is more expensive for us to maintain these slums than it is to eliminate them. The practical solution seems to be to give assistance, in some form, only to those who cannot afford to pay the necessary rent. In other words, to scale down the rents according to what they can pay, so that homes of the prescribed standard may be available for all who need them at rents they can afford to pay. The solution does not mean that the taxpayers must go on paying a subsidy forever, never having enough return to pay off the capital investment. Projects are planned to liquidate over a period of years under the present scale of rents and incomes, although history shows that both rents and rent-paying capacity increase with the years. But suppose they do not increase: the total cost to the people of the United States for the $800,000,000 of public housing, completed or under construction, is less than 15 cents per person per year. True, some individuals may lose their former profits from their "gougings" of poor families for shacks and inadequate housing; but should they not be forced into a legitimate business? The Federal Government, years ago, outlawed the selling of uninspected and rotten meats, even though the consumers are the only ones affected. How much more beneficial would be the outlawing of rotten housing, which affects not only the occupants, but the neighborhood and the entire city as well.

The question naturally arises as to how these completed projects have proved their worth. Our first project, with nearly four years of experience recorded, has had no arrests, and but one minor fire, although all occupants came from substandard housing and approximately 75 per cent of them came from our first- or second-worst slum area. Although juvenile delinquency has increased in the city, not one case has been from these families. Also, a private subdivision of decent, adequate homes has been built immediately adjoining our first project. This private de-

SCENES FROM THE BRENTWOOD PARK HOUSING PROJECT IN JACKSONVILLE

Tenants in these houses are determined to keep their homes and gardens neat and attractive

The Housing Authority provides children's play areas safe from traffic hazards and bad environment

velopment, made possible primarily by the healthy increase in property values and the stability brought about by our high maintenance standards, has demonstrated the value of subsidized housing for families not in the developer's market.

It has been shown how the taxpayers and the private developer profit by low-rent housing, but there is another item of profit demonstrated by our experience. The first 230 families of our Brentwood Park development pay an average rental of $13.35 per month as compared with the average of $20.90 in their former dwellings, utilities being included in both figures. This saving in living costs to these 230 families, over a twelve-month period, amounts to approximately $21,000. This is an increase in purchasing power available to local merchants and salesmen, for necessities which formerly were denied.

It should be remembered, also, that so-called public housing, constructed under the auspices of municipal housing authorities, is in most of its elements private enterprise. The land is bought from private owners, the plans are made by private architects, the contracts are awarded to private builders, the materials come from private factories; private labor is employed on the site; and, increasingly, the funds come from private investors.

After determining and presenting the facts for one city (and all cities have a similar condition), what is the answer?

Attacking the Causes of Blight and Slums

Slums, regardless of city, are all due to definite and specific causes, the operation and effect of which could have been prevented by foresight and courage. Since slums are costly, it behooves each city to correctly diagnose the cause, of which slums are only the symptoms, and apply the remedies which will not only limit the spread of this infection but will prevent its start in other sections of the city.

The first step in prevention is the enactment of a modern housing code, in support of a rigidly enforced building code. This housing code must apply to existing as well as to future construction and must be enforced without fear or favor, without political hindrance or bungling. All fair-minded citizens must be made aware of the purpose and intent of the housing code and should give their full support to those responsible for its enforcement.

So, a City Planning Commission in conjunction with a local Housing Authority, studying the effect upon and the need for changes in plan, zoning, housing, as made necessary in a rapidly changing world, could make of our cities the efficient places of beauty and economy which they should rightly be.

A Significant Judicial Decision

The need for, and the reasoning behind, slum clearance and low-rent housing work is best summarized by Justice J. Terrell, in a decision of the Florida Supreme Court, in which three other Justices concurred and two others agreed as to conclusion, one Justice not participating. This decision reads, in part, as follows:

"The encouragement of private enterprise has been one of the greatest factors in the rise of this country to its present social and economic greatness, but is it not a fact that the slum area with the vices recited has been one of the by-products of private enterprise? When the Constitution was adopted, more than nine-tenths of the people were engaged in agricultural pursuits and knew nothing of the slum, but on account of industrial expansion, thousands were induced to migrate to the urban centers where they became settlers and because of the rise in the cost of living unaccompanied by a corresponding rise in wages on the one hand, and a sheer lack of what it takes to rise from that environment on the other, they are caught in an economic straightjacket from which they are unable to extricate themselves.

"The man in the slums is too often a victim of the social and economic system that private enterprise has fostered. When he gets hungry and sees his dependents going without the dire necessities because of the system in which he is entrapped, he easily becomes a fertile source to generate crime and political isms adverse to democracy. Hurrahs for justice and equality become empty symbols when those on one block are basking in luxury and those on the next block are cramped by destitution. To contend that democratic society cannot relieve against the evils of its own creation is to admit that it has become lost in anachronisms and can't respond to the demand made on it."

Greater Automobile Use Found Necessary by Defense Workers

THE re-armament program has added materially to the number of men driving to work by automobile and in many cases has increased the distances they have to travel, a survey of automobile usage in the United States just completed by the Automobile Manufacturers Association reveals. The study shows clearly the adverse effect the proposed 1 cent per gallon increase in the Federal tax on motor fuel would have both on wage-earners and on farmers. It is based on extensive highway surveys carried out jointly by state highway departments and the U. S. Public Roads Administration, and on additional data compiled under the auspices of the Association.

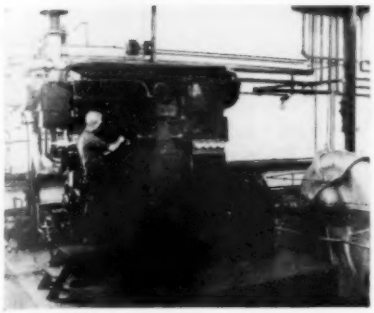
In almost all cities local transportation has become primarily automotive, it was found, and in cities up to the 500,000 population class as many as 70 per cent or more of the people entering the business sections of the city on a typical day do so by private automobile.

It was discovered that 2,100 American towns and cities, ranging in population from 2,500 up to the 25,000-50,000 class, have dispensed with, or have grown up without, interurban mass transportation systems of their own, and their combined populations of nearly 12,000,000 persons depend for routine movements upon private cars.

The study confirmed statements made by officials of the National Grange and other farm leaders that the passenger automobile has long since passed out of the luxury classification, and that any increase in the Federal tax on gasoline would increase the farmers' cost of production. It reveals that 78 per cent of the trips made by farmers and 72 per cent of the trips made by industrial wage-earners are for necessary purposes.

Sludge Gas for Power— A Good Investment

Toledo Sewage-Treatment Plant Makes Progressive Improvements for Most Effective Use of a By-Product



A 4-cylinder Rathbun-Jones gas engine connected to a 36-mgd American Well Works sewage pump at the Toledo, Ohio, plant

By A. H. Niles
**Superintendent,
Division of Sewage Disposal,
Toledo, Ohio**

AGITATION for gas engines to utilize the waste sewage-sludge gas from the sewage-treatment plant at Toledo was started in 1933 after a year's study of the operating records of the plant. Finally, in June, 1936, a contract was let for the installation of two Rathbun-Jones gas engines and appurtenances. One, a 310-hp, 12¾ x 13½-inch, 4-cylinder, 4-cycle, 514-rpm engine, was directly connected to one of the existing horizontal American Well Works sewage pumps with a capacity of 36 mgd against a 34-foot head. The other was a 225-hp, 12¾ x 13½-inch, 3-cylinder, 4-cycle, 514-rpm engine and was connected to a 300-hp synchronous motor, which then functioned as a generator. This motor was formerly connected to the sewage pump, which was powered with the new 4-cylinder gas engine. Although a generator of this type is neither as efficient nor as satisfactory as a new generator, it has served the purpose fairly well up to the present time. A new General Electric 400-rpm generator was purchased in November, 1940, so that the engine could be operated at a lower speed.

Changes Improve Results

The only difficulties which have been encountered can be traced directly back to the relatively high speed at which the engines ran. To obtain smoother operation, the speed of the 4-cylinder engine which was connected to the 36-mgd sewage pump was reduced. In order to compensate for the reduced pumpage as a result of the reduction of speed, the vanes of the impeller were built out something like 1 inch until even with the shrouds. This resulted in a pumpage of 35 mgd at 450 rpm against a 32-foot head, which was close enough to the original characteristics to give the required capacity at the reduced speed. Since that change, the 4-cylinder engine has performed smoothly. It has run in the last two years and nine months a total of 22,919.25 hours out of 24,096 hours, or an average of 95.25 per cent of the total possible time. This included all "outages" and a general disassemblement and thorough overhauling at least once a year.

Heat Exchanger

Provisions were made to circulate the jacket water of the gas engines through some 1,600 feet of 3-inch pipe and two 800,000-Btu-per-hour heat exchangers in order to heat the digesters and cool the engines at the same time. The digesters were formerly heated by gas-fired hot-water boilers, but the engine jacket water alone is now sufficient to keep the digesters at a temperature of 80-85 degrees F. at all times except during the very coldest part of the winter. The use of the heat exchangers makes just that much more gas available for power.

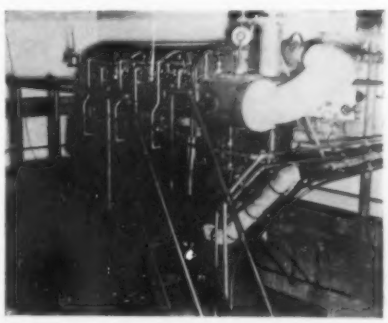
The gas-engine installation was put in without any provisions for gas storage in order to hold down the initial cost. This handicaps operation to a certain extent, especially in early spring. At that time, melting snow, rain and infiltration throw a heavy pumping load on the gas engines, and on account of the dilution of the sewage the production of gas is at a minimum.

A Good Investment

However, in spite of all handicaps, the gas engines have been an exceedingly good investment for Toledo. The cost of operation, including all extra help, supplies, repairs and actual cost of purchased electric current is deducted from the cost of current which would have been necessary had the gas engines not been installed. Since all sewage has to be pumped, and complete records are available, this is not a difficult matter to compute.

The cost of the gas engines and all appurtenances completely installed was $38,225. This amount was saved in the first two years and seven months of operation, and since that time the average net savings have amounted to $12,612 per year in spite of a considerable reduction in Toledo's municipal electric rate last January by the Toledo

(Continued on page 73)



A 3-cylinder Rathbun-Jones gas engine connected to a synchronous motor used as a generator. The new 150-kva generator will reduce the speed to 400 rpm and increase the efficiency

Emergency Precautions at Small Water Works

Hinsdale, N. H., Uses Impounded Upland Supply; Soda Ash, Alum and Carbon Give Finished Water of Good Quality

IN these days of national emergency, many water works are thinking of the precautions that must be taken to protect the existing water supply so essential to the comfort and health of the community, as well as to the continuance of operation of its industries. In company with numerous other New England water supplies, that of Hinsdale, N. H., received its first initiation in the nature of an emergency precaution soon after the great hurricane of September 21, 1938. Depending entirely on electric power from the great New England network, which was badly damaged by the hurricane, the operators of the Hinsdale supply found it necessary to feed all chemical solutions by hand as well as to perform many other operations in a more laborious manner than when electricity was available. This led to the installation of a 3-kw alternating-current U. S. Motors gas-electric unit, which supplies sufficient electricity to operate all the motors in the plant as well as to light it. A double-throw switch on the wall is used to shift the load from the local electric utility to the gas-electric set as soon as that has reached its operating speed.

As one drove southward through western New Hampshire on State Route 63 towards Hinsdale, a neat building to the east of the road attracted attention. On the green lawn was a sign announcing that this was the Hinsdale Water Works; and, as the community is rightfully proud of its compact and efficient plant, the sign added, "Visitors Welcome." Hinsdale's second emergency precaution step was to remove that sign, so as not to attract too great attention to its water works.

Source of Supply

The sources of supply for the town of Hinsdale, which has a population of about 1,700, are two ponds: Kilburn Pond, of 35 to 50 acres, and Baker-Hubbard Pond, of about 22 acres. This latter pond, which is the upper in the chain of three which include the small 400,000-gallon plant reservoir, is fed by springs from the hills to the north and east; and even during exceedingly dry weather the elevation of the water in this pond seldom falls more than a few inches. The two ponds and the reservoir are connected by an open brook, and the plant reservoir is connected to the plant proper by an 8-inch cast-iron line.

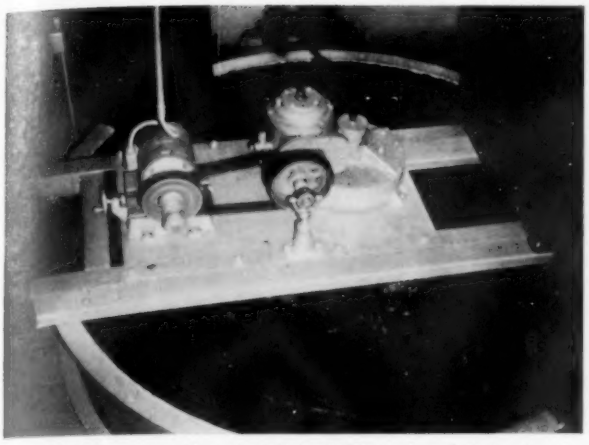
The color of the water from these sources varies from 30 to 150, the latter being in the spring, and the summer color ranging from 40 to 50. The alkalinity is exceedingly low, varying from 5 to 7.

Chemical Treatment

Water entering the plant in the basement through the 8-inch cast-iron line is delivered to the top of an 8-foot-diameter by 12-foot-high steel tank, the top of which is about 2 feet above floor level. This tank is painted with Bitumastic enamel to protect it against corrosion. The water is discharged into a spiral baffled channel, into which is also applied the solution of soda ash and a mixture of alum and activated carbon by a Wallace & Tiernan dry feeder. The soda ash solution is made up in a large earthen crock and is delivered to the raw water by a Proportioneers pump. The chemical dosage is about 1 grain per gallon of soda ash, and 7/8-grain per gallon of alum. The dry mixture of carbon and alum is made up with 8 ounces of carbon to 20 pounds of alum.

In the center of the tank is an electrically driven stirring device of four paddles, the speed of revolution of which can be altered through a Reeves variable speed pulley on the motor. The flow of water to this mixing tank is controlled by a float valve, and the average detention period is 22.5

The Hinsdale, N. H., filtration plant as seen from the rear. The 3-post wooden affair is the "Welcome" sign which was removed from the front of the plant



The Mixing Tank with Spiral Baffled Channel and Drive for the Slow-Stirring Device

Applying Soda Ash to Filtered Water by Means of a Proportioneers Pump Controlled by a Sparling Meter

minutes.

From the mixing tank the water flows to two sedimentation basins, each of which has a wooden baffle for around-the-end flow to prevent short-circuiting of the flow. The detention period in these basins is about 4 hours. The basins are cleaned about twice a year, since the volume of floc is not such as to greatly reduce the capacity of the basins as it settles.

From the sedimentation basins the water flows to two 8-foot-diameter filters which are steel tanks with the wash-water troughs about 30 inches below the top of the water and 30 inches above the sand. The rapid sand filter is made up of 30 inches of sand and 18 inches of gravel over a perforated cast iron pipe strainer system. The filters have a capacity of 100,000 gallons per day each and are controlled by Builders Iron Foundry rate-of-flow controllers and have indicating loss-of-head and rate-of-flow gages. The various valves for the operation of the filters are manually operated.

As the water flows from the filters, 1½ grains per gallon of soda ash is added in a 4-inch line in which is inserted a Sparling meter that controls the operation of the water-propelled Proportioneers chemical pump. From this point the water flows by gravity through 8,000 feet of 8-inch cast-iron pipe to the distribution system and to a 250,000-gallon steel standpipe.

A Worthington enclosed motor and pump located in the pipe gallery adjacent to the final chemical-treatment equipment delivers wash water to a 10,000-gallon steel tank located on the hill above the plant. The pump has a capacity of 50 gallons per minute, and the rate of flow from the tank to the filters for washing is governed by a Builders Iron Foundry automatic rate-of-flow controller.

In the filter room is a small laboratory adequate for making routine physical and chemical determinations for the control of the treatment. The equipment includes a stirring device for checking the effectiveness of various chemical doses.

The Hinsdale Water Works, with the present filtration plant, was placed in operation December, 1935. The plant is operated under the direction of Charles W. Harris, Superintendent of Water Works. The filtration plant was designed by Metcalf & Eddy, consulting engineers, Boston, Mass.

Investment Houses Compete for Local Housing Authority Bonds

SINCE the initial sale in February of last year of several small issues of Local Housing Authority Series "A" bonds, market interest in this new type of investment security has steadily broadened. To date, in excess of $37,000,000 of private capital has been invested in Series "A" bonds of 105 Authorities located in many different sections of the country. With one or two exceptions, all issues have been sold on sealed competitive tenders and as more and more dealers have become interested to the extent of submitting tenders the competition for the loans has resulted in a substantial reduction in interest costs to the borrowing units. For instance, net interest cost on issues sold early in 1940 ranged from 2.48% to 2.70% as compared with the results of last week's offerings, such as, for instance, a net rate of 1.99% named for $1,351,000 Bridgeport, Conn., Authority; 2.05% for $408,000 Lowell, Mass.; 1.98% for New Britain; 2.28% for New Orleans; 2.39% for Spartanburg; 2.14% for Nashville, and 2.24% for Phoenix, Ariz.

Dozens of investment houses are now bidding for new issues as they appear and, through the combined retail sales activities of these specialists, thousands of investing institutions and private investors are becoming acquainted with Local Housing Authority obligations.

Last week's offerings in the aggregate amounted to just under $8,000,000 bonds, which is about the largest amount thus far placed on sale at one time. Underwriters of these recent issues report excellent results in the retail distribution of the bonds. It is anticipated that additional dealer interest in the underwriting of future offerings will result from the successful outcome of the financing completed to date, which represents only a fraction of the comprehensive program of United States Housing Administration slum clearance program now actively under way. Tentative schedules call for the issuance of an additional group of Series "A" bonds by 19 local Housing Authorities about September 15. These are expected to aggregate about $8,500,000, and maturities to range from 1942 to 1961.

—From *The Bond Buyer for June 28, 1941.*

Local Government Is News-VIII

City Hall Goes to School—Educating Tomorrow's Citizens

By PHILLIPS BRADLEY

MORE than twenty-five million Americans will go back to school after Labor Day. Six out of seven will never go to college. Most of them will become the citizens of tomorrow in their home communities. They are the best insurance for the future of democracy—and for the support of efficient and honest local government—that we have in America. Can we reach any more valuable group than these youngsters with the story of how local government operates? Many of them will be voters five or six years hence—voters who can make or break good administration, depending on how they view government at City Hall. And what they learn in school will reach back into almost every home in the community. One of the critical points, therefore, at which City Hall should aim in any effective public relations program is the schools.

When City Hall goes to school, it is likely to find a ready and eager response, from both the teachers and their pupils. City Hall has much to offer in making the classroom come alive. Now is the time to plan for the next school year. What are some of the services which city officials can render the schools in interpreting municipal politics and government in and through the schools?

Politics—The Citizen's Business

Many activities go on within the four walls of the classroom that are not so very different from grown-up politics. Most schools have class, student council and other elections, and in many schools there is an active political campaign before these elections. Why not give teachers and pupils alike some idea of how regular city and town elections are held, by providing them with sample ballots and explaining the way in which ballots come into being for primary and general elections? Someone from the City Clerk's or the Election Commission's office can do much, not only to make school elections more interesting, but to educate future voters in how the election process works in their community. If voting machines are used, would it be too much to offer their use in school elections—at least in larger communities—and for sample demonstrations in selected schools?

It is never too early to learn something about the realities behind parties and their programs in local government. One of the ways this can be developed in the schools is to have party leaders talk *with*—not *to*—tomorrow's citizens. City councilmen and other elected officials can well afford the time to take part in a few school assemblies each year. They will incidentally learn a good deal about what people are thinking—as well as give a more intelligent picture of local affairs to the teachers and their pupils. There is no more alert and curious crowd than 'teen-age youngsters. Nothing is so likely to dissipate the animus against the "politician" as to let him talk informally with the people around him about city and town affairs as he sees them. And no group will be more ready to sit down for questions and answers—and often arguments—than high-school pupils. Every high school should have a chance to meet some of the city or town elected officials two or three times a year. Such contacts are sure to be mutually profitable, and in most schools welcomed.

Besides visits to the schools, it is a valuable training in insight and understanding to have the pupils visit meetings of the City Council. Here a regular system of visits by classes or class committees can easily be established—once it is made clear to teachers that their pupils are welcome. At the college level much has been done in many places with this sort of visit. The program developed by Professor Garfield Jones of the University of Toledo is outstanding. These appointed class members attend and report on Council proceedings on different matters. This can obviously not be done with high-school pupils at such an advanced level as is carried out in

As another September rolls around—a September in which defense problems loom large in local government—it is a strategic time for city officials to consider a more integrated public relations program in and through the schools. This article suggests some of the ways through which such a program can be developed. There is no community in which school principals and teachers will not welcome a more active interest in civic training on the part of City Hall.

THE AMERICAN CITY desires to obtain all the information possible on this type of cooperation. It believes that it is especially important at the present time to get information on City Hall-school cooperation widely known throughout the country. Write to the Editor about your program.

COURTESY OF NEW YORK CITY DEPARTMENT OF SANITATION

School children visit a Sanitation Department garage and learn about machines for snow removal

COURTESY OF BOARD OF EDUCATION, NEW YORK CITY

FROM "CALIFORNIA SCHOOLS," CALIFORNIA STATE DEPARTMENT OF EDUCATION

Left—Fire-Drill Instruction by an Expert. Right—Children from the Montclair Elementary School, Oakland, Calif., Learning About the Fire-Alarm System in a Neighborhood Fire Station

Toledo. But even one or two observations a year of what the Council is doing and how it conducts its business would be invaluable training for citizens at the high-school level.

City Activities in the School Curriculum

There are many ways in which the administrative offices in City Hall can serve the schools. Civics and economics are now generally taught from the seventh or eighth grades on. The approach is of course quite different at the different levels. There is no level, however, to which City Hall cannot contribute in increased understanding and civic awareness. In the lower grades one of the most useful devices is a series of conducted trips to the more dramatic city activities—water supply, sewage disposal, fire protection, etc.

Take, for instance, the problem of water supply and sewage disposal. Few adult citizens really know much about the complex nature of these functions. Where does the water come from, how is it stored and distributed, what happens to it after it is used, are questions which can be made interesting and exciting to the 10- or 12-year-olds in the schools. The answers to these questions can be told in story form and illustrated by charts and animated cartoons with very little difficulty—and a high return in interest.

More advanced pupils in high school will derive more objective and comprehensive understanding from contact with the regular activities of City Hall. Some of the public relations services already discussed in this series can be made specifically useful to the high schools. Movies, exhibits and other informational services carried on by the city can be routed to the schools as a regular part of their program in civic training. The radio can also be utilized directly with the schools as well as with adult groups. Class trips can be extended to other activities besides the more dramatic ones noted above. Regular conferences with department heads—where round table discussions will also prove no less a two-way circulation of ideas and suggestions—will also be cordially welcomed by the schools.

Most high schools now include regular instruction in civics and problems of democracy. Much can be done by City Hall to enliven and quicken these courses in cooperation with the teachers. Although in most southern and western states high-school courses include material on state and also local history and government, the textbook materials are necessarily general—and often abstract. There is little in most of these courses to personalize—and dramatize—the work of city and state officials. City officials in every community could do much to bring into these courses a more sure and a more interesting and informative approach to government. Classroom talks and conferences, prepared descriptive materials and particular suggestions by the city officials in charge, will be welcome additions to the regular curriculum. Most teachers will go more than half-way in making room for this kind of direct approach, once they know that it is available for the asking.

Defense and the Schools

Particularly on the eastern seaboard —but surely in the next year throughout the country—there will be increasing emphasis on defense problems in local government. Many of the activities which civilian defense imposes on our cities and towns must necessarily be carried out by city officials. Some, however,—for instance, air raid shelter organization and discipline,—directly concern the schools, both teachers and pupils. The latter work will of course have to be carried out in close cooperation with the schools. On the other hand, the whole program of civilian defense is of vital concern to every citizen, young and old. One of the best ways in which to insure the most effective coordination of defense efforts is to make them generally known and understood by the teachers and pupils in our high schools and also in our elementary schools. Education in defense measures—and an understanding about the whole program—will get into each home more quickly and more thoroughly through the schools than through any other channel.

Michigan's Tax-Reverted Land Sales Help Cities Develop Land-Use Programs

The Initial Sales of Tax-Reverted Land in Michigan's 47 northern counties under a long-term land-planning and land-selling program have produced the following results:

1. Cleared the way for putting into effect the land-use programs designed by most of the cities in the area to retain for public ownership and development land with little or no economic possibilities under private ownership.

2. Returned more than 126,000 acres of rural land and 3,024 urban lots—properties with economic possibilities—to the tax rolls.

Under the program, authorized by 1939 state legislation, cities may make recommendations regarding future use of urban land reverting to the state because of tax-delinquency, according to the American Society of Planning Officials. In working out their programs, cities are advised by land-use experts, and parcels of land needed for public use may be obtained by cities for a small sum—usually $1 a deed.

Land Withheld for Public Purposes

Land which should not be returned to the tax rolls because of excess subdivision, topography or other reasons is withheld from sale by the Land Division of the State Conservation Department, which has power to classify land prior to its sale and offer only property whose economic possibilities justify its return to private ownership. In this connection, the Land Division collaborates with the cities, which recommend lots to be sold, and also supervises sale of the land at auction.

For those cities which have not yet made land-use recommendations, the sales will be postponed. The cities which have filed their programs with the Land Division will be included in this summer's series of sales.

So far, the first 35 cities in northern Michigan with approved land-use programs have been deeded 261 parcels, requested deeds to 226 parcels, and have asked that 1,244 parcels be withheld. Of the land deeded, 84 parcels will be used for recreation purposes, 31 for snow-dumps, 12 for parking, 22 for streets, and the rest for miscellaneous purposes.

The first step in the selling-planning program—and one which must be taken before the cities can make final decision on property they may want to obtain for public use—was to give former owners of tax-reverted land a chance to regain it by requesting, within 90 days after reversion, that it be offered for sale. The initial sales, which started last October and ended in April, were in this "request" category. In these "request" sales, bids must equal at least 25 per cent of the assessed value of the land for the year before the state gained title. Former owners have 30 days after the sale to meet the highest bid to regain title, and have the right to buy on installment—20 per cent down and the balance over a seven-year period.

Financial Results

Besides returning the land to the tax rolls, more than $280,000 was obtained from sale of the land, the money to be divided for the most part among local governmental units. This amount however, does not begin to approximate the sum lost through tax delinquencies canceled when the state took title to the property. Of the $280,000, rural property brought $179,000 and urban property $101,000, with average prices by counties ranging from 72 cents to $5.90 an acre for rural land and $154 to $1,094 for platted lots. Of property requested to be sold, a considerably higher percentage of urban land was purchased—76.3 per cent in comparison with 55.6 per cent of rural land offered.

With the "request" sales out of the way, the Land Division scheduled a second series of sales of remaining urban property, to be offered at the recommendation of cities in accordance with their land programs. It was pointed out that little land of value to a city land-use program was placed on the market in the first "request" sales.

Complaints that speculators are buying land for re-sale at excessive profit brought the comment that "this is more or less inherent in the procedure adopted for disposal of these properties, as a public auction usually attracts only bargain-hunters and persons specializing in land."

Some of the "sharp practices" have been eliminated, however, including the bidding-up of a piece of property by the "land shark," who then fails to make an immediate down payment. The Land Division re-offers this property at the end of a sale when the competition has left, permitting it to go for the lowest bid. Land officials still would like to see the 25 per cent minimum price raised to increase the level of property values.

The land sales program of the 47 northern counties should not be confused with the land sales of the 36 southern counties, held under jurisdiction of the State Land Office Board —entirely separate from the Land Division. Cities in the lower counties have been hindered in their land-use planning because all land was offered for sale at the first auctions, with municipalities forced to bid for land along with individuals. After the first sale, however, a city may request what is left for public use, receiving the property for a "nominal consideration." Final results of the first sales in the southern counties, completed some time ago, show that a total of 204,974 parcels were sold for $13,331,000. In addition, 8,775 parcels were returned to former owners under a clause in the act permitting local governmental units to withhold property from sale if the owner desires to pay up back taxes and special assessments. Taxes collected from such parcels totaled $475,000.

Procedures in the southern county sales are similar to those for the northern counties. In the initial sales, former owners may match bids, but pay only 10 per cent down and the balance over a 10-year period. In the second series of sales, however, the former owner does not have the right to match bids, and must pay 25 per cent down.

Slum Clearance and Defense

In future aerial attacks on cities, "particular attention will be given the poorly constructed districts — slums, old-law tenements, and the like," says Dr. J. Enrique Zanetti, Professor of Chemistry in Columbia University, in his recent pamphlet, "Fire from the Air: the ABC of Incendiaries" (Columbia University Press, 1941). "If correctly mapped and adequately sprayed with incendiaries, these districts would constitute areas in which to start a dangerous conflagration. So great is this danger that, from the point of view of defense, the removal of the slums will before long cease to be a purely humanitarian undertaking and become an item in a program of national defense."

Resurfacing Horse-and-Buggy Streets in University City, Mo., is Part of the

Street Maintenance Program

By WALTER A. HEIMBUECHER
City Engineer

THERE are quite a number of residential streets in University City with an 8- to 10-inch Telford foundation with 4 inches of waterbound macadam and about 1 inch of gravel wearing surface—typical horse-and-buggy streets built between 1904 and 1915.

Between 1916 and 1926 inclusive, these streets were maintained by sprinkling with road oil to keep down the dust. This developed a thin crust which lasted a year or two, usually cracking and breaking during the second spring, after which chuck-holes of various sizes developed. When riding became too rough and complaints were too numerous, these streets were scarified, reshaped and rolled, and more road oil put on. In two years more they were as bad as ever. The cost of this work was from 6 to 12 cents per square yard.

About 1926 it was decided to experiment on these old waterbound macadam streets with a liquid asphalt surface treatment applied by a pressure distributor. The streets were scarified, shaped and rolled, and given a tack coat of 0.25-gallon per square yard of cut-back asphalt. On this, stone chips passing a ½-inch screen and retained on a ¼-inch screen were scattered, and then 180-penetration liquid asphalt was applied with a pressure distributor at the rate of 0.4-gallon per square yard at a temperature of 350 degrees F. This was immediately covered with the same size of stone chips, using a chip spreader attached to the rear of a truck. The roller immediately followed the work while the asphalt was still soft and consolidated the mass into a tough carpet coat with an excellent non-skid surface.

The cost varied from 20 to 30 cents per square yard, and on the residential streets the work has lasted from eight to ten years, with a negligible maintenance cost occasioned by small breaks occurring where the surface was not firmly attached to the macadam base. There are a number of streets of similar construction in the apartment-house district which carry considerably more traffic of passenger cars and light delivery trucks than those in the one-family residential section, and on these the surface treatment was similar to that described above but had to be replaced within four or five years. It does not wrinkle or shove and has made a very serviceable wearing surface.

We believe completely in the "Stitch in Time" principles. As soon as a pavement shows wear and minor breaks appear, it is promptly resurfaced. Deterioration is not permitted to advance to the point where reconstruction becomes necessary.
—Walter A. Heimbuecker.

Heavy-Traffic Streets

There are several major thoroughfares carrying from 10,000 to 15,000 vehicles a day of mixed traffic, that is light and heavy trucks, buses and passenger cars, with a 10-inch Telford macadam foundation on which has been applied a 2½-inch asphalt macadam penetration wearing surface. These streets have given very good service in the last 14 years with not more than one or two applications of 0.25-gallon of hot liquid asphalt covered with ⅜- to ¼-inch stone chips rolled to key them to the surface. This surface treatment seals cracks, takes up the wear in the surface and revives the asphalt in place as well as prolonging the life of the pavement from five to six years and at a cost of only 15 cents per square yard.

Aggregate

The stone chips used in our resurfacing program are a hard, tough trap-rock with a hardness of 16 and a French coefficient of 16, obtained from the quarry at Pilot Knob, Mo., some 90 miles south of St. Louis. While the trap-rock chips cost twice as much as either limestone or gravel, it has proved to be cheaper over a period of years. Tire chains in winter are especially severe on this type of pavement, and we have found practically no damage to streets on which the trap-rock was used, while others have had quite a number of breaks and pitted spots. The chips, being sharp, angular

(Continued on page 73)

An All-around Utility Truck Owned by University City, Mo., with a General Motors Chassis and a Universal Auto Body Co. 3-way 1½-yard Dump-Body

A Fire Department Run Like a Million-Dollar Corporation

2nd Fire Prevention Award for City

NATIONAL FIRE PROTECTION ASSOCIATION

Record of Merit

FIRE PREVENTION WEEK

Schenectady again won the highest New York State award of merit for educational activities during Fire Prevention Week in 1940. Fire Chief James J. Higgins announced today, and the certificate, now in the Fire Department's possession, has been placed alongside the one received for winning highest State award in 1939. The certificate is pictured above, while Chief Higgins, who directed the activities during Fire Prevention Week, is shown at the left.

Jean Duffy, Barbara Dunton,

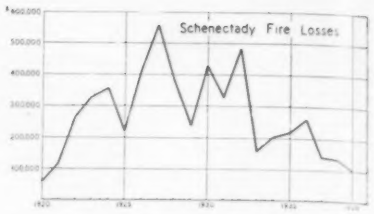
James J. Higgins

Recognition

AMONG fire chiefs, Schenectady, N. Y., is known as a progressive city, because all at once it took radical measures which have achieved the kind of results which most fire chiefs desire to attain.

The fire-loss record has ranged down from $557,000 in 1927 to $485,000 in 1932; to $260,000 in 1936; to $141,000 in 1937; to $136,000 in 1938; to $100,000 in 1939; and to $81,235 in 1940. Since September 1, 1937, when the present Fire Chief took over, after 29 years in the Department, there has been full-scale prevention work, including 46,000 inspections per year and a continual stream of newspaper and radio publicity.

Up to 1937 there were 21 captains at $2,325 per year and 16 companies. All the captains were made lieutenants at $2,325, and 12 new captains were created at $2,500. There are now 20 lieutenants at



"Business Chart"

$2,325, and there is a company officer on every piece of apparatus. The various personnel changes have increased salaries from $48,200 up to $89,700, but the increase in efficiency and responsibility are said be well worth it. The Fire Chief points out that apparatus is expensive and an officer should be responsible for its safety and condition. He regards the Fire Department as a million-dollar corporation. Besides the fire-alarm signal station, there are nine fire-houses valued at $409,000, containing $183,000 worth of fire apparatus as follows:

1. Two 1,000-gallon Mack pumpers; 75-foot American-LaFrance aerial; Mack rescue and lighting car.
3. 1,000-gallon Mack.
4. 1,000-gallon American-LaFrance.
5. 1,000-gallon American-LaFrance; 75-foot American-LaFrance aerial.
6. 750-gallon American-LaFrance.
7. 1,000-gallon American-LaFrance; 300-gallon American-LaFrance; 75-foot American-LaFrance aerial.
8. 1,000-gallon American-LaFrance.
9. 750-gallon American-LaFrance; City Service Mack.
10. 750-gallon American-LaFrance.

In addition to three officers' cars and a mechanic's truck, there are on reserve three pumping engines. Thus, it is seen, the Schenectady Fire Department can throw 10,000 gallons of water per minute with its regular line pumping engines. The number and character of non-fireproof buildings and the narrow streets require this ability to deliver a large volume of water quickly.

Paul Whiteman is made Honorary Fire Chief of Schenectady; Chief James J. Higgins speaking

The Best Apparatus

As with most fire chiefs in cities having municipal governments

Fumes, smoke, darkness, cold and water, as well as fire, are enemies whose defeat requires special equipment

which appreciate the importance of the fire department, Chief James J. Higgins does not favor municipally-built fire apparatus for a city of this size. "You must set up," he says, "a repair shop adequate for manufacturing, with blacksmiths, upholsterers, and mechanics of all kinds. Where this is done, many items are usually not figured in the cost. The best factory-built fire apparatus is built from the bottom up, like a locomotive, is sturdy in every respect, and will deliver wherever called upon. For instance, the two 1,000-gallon pumpers we bought in July, 1936, have run every day for the five years and have not cost us $20 for repairs. In 1940 we bought another of these pumpers, being one of the first cities to use the new performance test specifications, and we would like to purchase more pieces of the same kind. When it comes to aerial ladders, a city cannot build them at all. Our new 75-foot aerial with wood ladders handles as easily as a baby carriage."

Firemanship

In 1938 the Department built a drill tower and set up a new standard of personnel requirements. Of the 530 applicants, 350 were eliminated on the mental test. When a man comes up for appointment, he is given a physical examination, and after 90 days' probation he is given another physical examination before becoming permanent. The drill tower is used during the summer months every day, by one to two companies, with the result that the men learn to coordinate body and mind, which means to carry out instructions physically, to take care of victims and of themselves. The public appreciates their skill.

Inspections

When Chief Higgins took hold, the fire-prevention work was performed by an exclusive group consisting of a deputy fire marshal, an assistant deputy fire marshal, a chief inspector, and six inspectors, at a cost of $19,000 per year. These were discontinued, and a deputy chief and two inspectors were appointed, and all inspections are now made by the companies in their own districts, so that the men get acquainted with the conditions and hazards which they must meet and fight. All homes are inspected once a year, and in each instance a piece of fire prevention literature is left in the home. Special attention is given to the 15,000 school children, who bring to their homes the story of fire prevention.

Two-Way Radio

The officers' cars and the rescue squad car are equipped with two-way General Electric radio and public-address system. The system is of course connected with the police radio system. The loudspeakers permit orders and information to be received from, and given to, headquarters at a distance of several hundred feet from the cars. The cars are equipped with 15-watt ultra high frequency mobile transmitters and crystal controlled receivers, and weatherproof marine-type loudspeakers. "The same as with a lighting truck," says Chief Higgins, "I don't know how we got along without it."

New Fire Alarm

The new $186,000 Gamewell fire-alarm system, nearing completion, has panels for 400 boxes on 20 circuits including 86 new modern non-interfering boxes and the replacement of 35 of the existing 181 boxes. There are 1,200 phantom boxes, one for every intersection. Where the circuits are underground, the boxes are of the pedestal type, and all the boxes are equipped with indicating lights, which add $54,000 to the cost and are well worth it.

The Department as reorganized consists of the chief, 4 deputy chiefs, 12 captains, 20 lieutenants, 2 inspectors, 2 mechanics and 98 privates, a total of 139 firemen.

Larger Plots Help Home Sales

In its Real Estate Section of July 20, "The New York Times" calls attention to a report of the Bergen County (N. J.) Planning Board in which it is pointed out that Bergen County real estate developers are planning larger lot sizes with wider frontages than ever before chiefly because the increased areas of the lots have more sales appeal.

One developer, the Board stated, when questioned on the subject replied that he tried to sell his lots with as small an area as possible as this is good business practice. He found, however, that larger lots sell faster and for a larger price and, therefore, he has in many cases sacrificed several lots in a large layout and has been able to increase the lots to a readily salable size.

Public Works Maintenance Activities in 24 Cities

(Assembled by the American Public Works Association)

Name of City	Population 1940	Street Repair & Maintenance			Sewer Maintenance & Cleaning			Street Cleaning			Maintenance & Repair of Structures			Traffic Signs, Markers & Painting		
		1939 Expend.	1940 Expend.	1941 Appro.	1939 Expend.	1940 Expend.	1941 Appro.	1939 Expend.	1940 Expend.	1941 Appro.	1939 Expend.	1940 Expend.	1941 Appro.	1939 Expend.	1940 Expend.	1941 Appro.
Baltimore, Md.[a]	854,144	$ 798,950	$ 600,063	$ 700,000	$ 85,914	$ 83,704	$ 85,000	$ 494,832[hh]	$ 492,890[hh]	$ 550,000[hh]	$ 124,899	$ 112,942	$ 115,000	$ 28,489	$ 20,000	$ 20,000
Buffalo, N. Y.[a]	575,150	83,926	97,468	75,000	100,504	153,321	150,700	235,679[b]	259,591[b]	234,683[b]	162,920	157,790	147,661	---	---	---
Cleveland, O.	878,383	1,545,640	1,540,117	1,773,800	91,944	91,504	104,740	256,263	254,280	255,000	---	---	---	50,000	55,000	75,000[a]
Columbus, O.[d]	304,936	612,757	672,857	700,000[e]	65,868	90,179	112,238	[f]	[f]	[f]	1,317	---	[e]	51,504	50,000	55,000
Dallas Tex.[a]	293,306	159,866	189,268	202,392	16,269	16,604	21,137	77,617	87,991	93,600	5,757[g]	12,375[g]	9,175[g]	6,800[h]	6,600[h]	7,200[h]
Houston, Tex.[d]	386,150	204,866	257,695	---	35,735	34,846	---	53,454	51,174	---	53,303[i]	73,031[i]	---	---	---	---
Los Angeles, Calif.[a]	1,496,792	1,861,192	1,530,117	1,540,000[j]	417,403[k]	413,673[k]	450,000[k]	790,191	874,314	820,000[j]	49,711	48,402	40,000	200,000	355,000	405,000
Louisville, Ky.[a]	318,713	292,523[l]	326,615[l]	315,650[l]	56,618[m]	58,717[m]	57,639[m]	96,610[n]	104,493[n]	89,788[n]	54,266[o]	49,984[o]	50,979[o]	33,137[h]	36,199[h]	31,895[h]
Memphis, Tenn.[d]	291,312	173,456[p]	131,912[p]	170,087[p]	86,903	91,460	88,000	74,892	69,027	62,000	---	---	---	---	---	---
Milwaukee, Wis.	589,558	455,187	455,670	350,000	129,134[q]	136,789[q]	151,542[q]	212,434[r]	283,722[r]	301,680[r]	96,059[s]	105,939[s]	119,261[s]	16,785	16,798	16,800
Minneapolis, Minn.	489,971	212,905[t]	167,328[t]	150,000[t]	94,900	93,500	95,000	140,210[u]	154,800[u]	156,850[u]	69,500[v]	95,500[v]	95,700[v]	67,162	73,000	75,000
Oakland, Calif.[a]	304,909	268,470	278,285	282,000	49,536	52,751	52,000	214,920	191,493	191,000	33,433	30,770	30,000	43,473	46,242	45,000
Philadelphia, Pa.[d]	1,935,086	1,579,493	1,371,549	1,400,000	76,151	68,094	75,000	1,333,079	1,174,430	---	199,213[w]	214,295[w]	205,000[w]	62,835	65,481	60,000
Pittsburgh, Pa.[d]	665,384	341,441	349,112	301,233	54,730	66,855	91,637	245,017[x]	272,750[x]	280,722	115,895[y]	168,209[y]	74,846	44,000	44,000	44,000
Portland, Ore.[z]	307,572	77,755	116,257[z]	102,994	48,901	63,109[z]	57,700	270,139	277,389[z]	269,716	---	---	---	40,000[aa]	34,000[aa]	36,000[aa]
Rochester, N. Y.[d]	324,694	222,900[bb]	221,100[bb]	125,000[bb]	84,325	78,130	82,000	218,670[cc]	209,040[cc]	225,000[cc]	---	---	---	---	---	---
St. Louis, Mo.[a]	813,748	527,999	588,524	---	276,307	261,422	---	304,443	302,355	---	114,603	92,800	---	146,080	143,161	---
St. Paul, Minn.[d]	287,736	103,407	79,869	81,334	72,127	62,882	67,735	77,304[ii]	50,135[ii]	57,000[ii]	---	---	---	4,193[jj]	3,585[jj]	---
San Francisco, Calif.[a]	629,553	358,079	421,979	---	263,124	290,657	---	536,060	593,311	---	61,235	62,968	---	42,201	33,500	---
Seattle, Wash.[d]	366,847	236,745	233,072	235,000[aa]	105,867[dd]	114,150[dd]	110,000[dd aa]	220,377	198,040	200,000[aa]	21,519[ee]	20,962[ee]	20,000[ee aa]	53,205[ff]	71,703[ff]	65,000[ff aa]
Toledo, O.[d]	281,096	174,215	172,775	183,535	17,302	20,932	23,772	152,448[gg]	163,226[gg]	170,286[gg]	---	---	---	28,005	36,771	39,680
Washington, D. C.[a]	663,901	949,768[d]	972,502[d]	810,000[a]	105,272	101,630	103,166	390,170[kk]	412,845[kk]	445,160[kk]	---	---	---	32,002[ll]	42,108[ll]	43,500[ll]
Syracuse, N. Y.[d]	205,967	185,126[mm]	213,571[mm]	207,574[mm]	54,810[mm]	60,960[mm]	45,926[mm]	112,371[nn]	132,166[nn]	150,344[nn]	79,038[oo]	77,537[oo]	81,057[oo]	---	---	---
New Orleans, La.[d]	494,537	207,189[pp]	225,831[pp]	---	---	---	---	285,262	295,555	---	185,137	159,205	---	15,000	24,000	24,000

[a] All figures are for fiscal year

[b] Does not include snow and ice removal costs which were: 1939 - $293,327; 1940 - $324,980; 1941 (appro.) - $245,000

[c] Includes a replacement program

[d] All figures are for calendar year

[e] Cost of bridge maintenance and inspection of pavement cuts included in 1941 appro. for street maintenance

[f] Costs are partly assessed. 1939 cost of snow removal was $4,577

[g] Includes expenditures on street signs

[h] Traffic signal maintenance and operation not included

[i] Expenditures on intersection bridges and bridges over streams only

[j] Budget schedule

[k] Includes operation expense of treatment and pumping plants

[l] Includes supervision and reconstruction costs

[m] Includes supervision costs

[n] Expenditure for snow removal included but this amount is small

[o] Expenditures for city hall and annex only

[p] Includes costs of inspecting pavement cuts

[q] Does not include costs of cleaning catch basins which were: 1939 - $51,572; 1940 - $50,673; 1941 (appro.) - $50,173

[r] Does not include snow removal costs which were: 1939 $100,657; 1940 - $191,519; 1941 (appro.) - $110,000.

[s] Includes expenditures for both buildings and bridges

[t] Expenditures for paving repairs. Other expenditures were:

	1939	1940	1941 (appro.)
Paving Replacement Program	$810,000	$807,000	$1,020,000
Dirt Street Maintenance	756,420	754,000	726,000

[u] Does not include snow removal costs which were: 1939 - $125,330; 1940 - $253,000; 1941 (est.appro.) - $106,450

[v] Structures only; 1940 and 1941 increase due to less WPA work Bridges: 1939 - $57,313; 1940 - $57,545; 1941 (appro.) - $87,069

[w] Expenditures for bridges and plant

[x] Does not include cindering and snow removal costs which were: 1939 - $58,311; 1940 - $86,656

[y] Includes repairs by contract

[z] Before 1940 city's fiscal year was from Dec. 1 to Nov. 30. By charter amendment effective Jan. 1, 1941, fiscal year and calendar year are now concurrent. Consequently, the 1940 costs are for 13 months.

[aa] Estimated

[bb] For asphalt pavements only. 1941 figure is budget allocation but actual expenditures will probably approximate the expenditures of 1939 and 1940

[cc] Does not include snow removal costs, all of which are met by special assessments. Cindering, snow plowing and removal costs were: 1939 - $399,690; 1940 - $338,005; 1941 (est.) - $325,000. Sidewalk snow plowing costs were: 1939 - $75,850; 1940 - $95,606; 1941 (est.) - $125,000

[dd] Includes expenditures for cleaning and repairing catch basins

[ee] Includes only expenditures for bridges and bulkheads

[ff] Also includes expenditures for traffic signals

[gg] Does not include snow removal costs which were: 1939 - $51,244; 1940 - $25,217; 1941 (appro.) - $18,800

[hh] Does not include snow removal expenditures which were: 1939 - $35,778; 1940 - $68,456

[ii] Does not include snow removal costs which were: 1939 - $72,127; 1940 - $162,542; 1941 (appro.) - $54,500

[jj] Does not include traffic signals cost of which were: 1939 - $9,545; 1940 - $11,550; 1941 (appro.) - $9,000

[kk] 1941 appro. includes $29,400 for equipment replacement. Snow removal costs were: 1939 - $18,793; 1940 - $84,233; 1941 (appro.) - $33,749

[ll] Includes personal services

[mm] Labor and materials

[nn] Labor and materials. Snow removal costs were: 1939 - $68,317; 1940 - $115,182; 1941 (appro.) - $75,000

[oo] Includes: city hall, police station, and two comfort stations.

[pp] Includes only expenditures by Division of Public Works on unpaved streets. Expenditures by WPA and the Municipal Repair Plant are not included

Park-Site Homes System, Copyrighted by H. G. Holman, M. R. A. I. C.

The Park-Site Homes System

By H. G. HOLMAN, M.R.A.I.C.
Architect, Toronto, Ont.

THE modern and rational method of urban land subdivision shown in the accompanying copyrighted plan does away with the obsolete scheme of a string of side-by-side "fence-picket" lots, devoid of individuality, strung along a street between two corner lots.

This method is "The Park-Site Homes System" (copyrighted), and it provides many advantages, not alone for the home owner, but also for the realtor employing the System. Then there is the attractive setting which provides a beauty-spot enjoyed by the municipality at large.

The unit of the System is the town or city block, which in North-Americanese defines an area of land bounded, usually, by four streets. But the System may be extended to large town-planning projects and to areas other than rectangular.

Each block contains a system of parks, and these provide open-air breathing and play space with perfect safety for children; also there is adequate off-street parking provided.

Every lot occupies a corner location, and no extra tax burden is imposed for this feature. There is a wide choice of orientation and location, and prospective purchasers may choose either a lot at the corner of two municipal streets; or a lot at the corner of a street and a park; or a lot at the corner of two parks. Again, with the above, he may have the choice of north, south, east or west frontages along the same side of a street.

Back yards, as commonly understood, are eliminated, which is an attractive feature in itself.

Much greater space is afforded between houses on adjoining lots, and the landscaping of the park areas is extended to embrace the areas surrounding the houses. As a result, the whole area, so treated, under the Park-Site System, gives the desired effect of homes in a park setting.

Other advantages of this System are that practically 100 per cent of additional frontage will be available for sale; and, because of the orientation of the buildings, one house design only need be employed throughout without any semblance of unattractive repetition. Thus the principles and consequent economical advantages of mass production of the houses are available to the developer of such a subdivision.

The author will be pleased to answer, on a professional basis, inquiries relating to this copyrighted System with a view of having it used in any community.

Scranton's Diamond Jubilee and Centennial of Founding

The city of Scranton, Pa., celebrated the seventy-fifth anniversary of its incorporation, and the one hundredth anniversary of its industrial founding, July 23-30, in a program sponsored by the Scranton Association. During this period an elaborate and varied series of events was presented featuring in succession: Homecoming Day; Youth Day; Founders Day; Military Day; Faith of Our Fathers Day; Field Day; Greater Scranton Day; Organization Achievement Day. Six performances were given of the spectacle "Frontiers of Freedom," for which there was a cast of 2,000 local participants.

At the Electric Power Board of Chattanooga

New Records Give One-Stop Service

WHEN it became apparent that the Electric Power Board of Chattanooga, Tenn., was taking on many new customers, a careful study of the situation revealed that the records kept in connection with customers' applications, history, credit, and service, were inadequate.

The system just installed contemplates the following items: use of desks instead of counters for customer contacts; centralization of all customer contacts with one group of clerks; centralization of all telephone customer contacts with one group of clerks; centralization of all records and information at three sources; and interdepartmental communication providing a direct and immediate contact with all sources of information. Therefore, three centralized records were installed: Customers' Service record, a Customers' History record, and the Unit Bookkeeping desks.

These three sources of records are connected by inter-communicating telephones with the customer contact clerk to secure quickly all information necessary to give a customer service with regard to an application, a move or change of service, a duplicate bill, to make an adjustment of his inquiry with regard to a high bill.

Before the installation of the new records, it was necessary, because of the rapid growth of the city and the many new customers being taken on by the Board, to redistrict the entire area, and meter-reading routes were changed so that the whole area could be read in 21 consecutive days. All accounts were given new folio numbers, and space was left between folio numbers to take care of future growth of the area so that it will not be necessary to use decimals for folio numbers.

The *Customers' Service* record is a Kardex file in which a master card for each meter installed on the lines of the Power Board is filed. These cards are filed by street address and carry the location and the name of the customer using service at that location. There is also in this file a field card which carries the meter number, the location, and the customer's name. This field card is used as a work order to connect or disconnect service and goes to the meter department for execution. This is a permanent record and by the use of this card the work of typing work orders is eliminated. This file also contains a perpetual meter test record.

The *Customers' History* record is a Kardex file containing a card for each customer on the lines. These cards are filed numerically by Soundex. It is used as a credit file upon which is posted information showing the customers' bill-paying habits, whether or not he loses his discounts, whether or not collection effort has to be made to collect his bill, and whether or not he has ever been disconnected for nonpayment. This file also has in it a record of all customer deposits which constitutes a subsidiary ledger of customer deposits and eliminates much work formerly done in this connection. This file also has control of inactive accounts and control of accounts charged off as uncollectible or bad debts. It is expected that this file will save a great deal of money for the Board in collecting bad accounts.

The Unit Bookkeeping system is simply that, instead of four bookkeepers working at random on all the accounts, each bookkeeper has a certain number of accounts; in this case 10,000. On these accounts he does all the posting of cash, changing records on meter books, and rendering final bills. This system definitely places responsibility and enables the bookkeeper to become familiar with the accounts which he handles.

The installation of this system will be a great convenience to the customers in that they can receive all types of information at one place. It is also possible for a customer to change his service from one location to another now without coming to the Board's office at all, by transacting his arrangements by telephone; the customers' service and customers' history being connected directly through the PBX switchboard.

—From *EBB Spotlight*.

To Meet the Housing Emergency

(Continued from page 5)

codes, and various sanitary and health regulations, including the regulation of trailer camps. Existing building codes should be promptly examined for the purpose of both tightening up deficiencies and modernizing outmoded provisions which involve high costs without commensurate benefits. Effective housing codes are a means of avoiding the negation of much of the advantage of the production of new housing. There should not be a "mining camp" attitude in communities affected by new or greatly expanded defense activities.

Non-Defense Housing

Such economic factors as high taxes, shortages of essential materials subject to defense priorities, and normally proper credit controls to prevent speculative excesses, will all tend to curb private building operations; beyond these inevitable curbs, no arbitrary curtailment of private building operations, as such, seems justified at this time.

Governmental housing agencies, manufacturers of building materials and equipment, architects and builders, should all be encouraged to exercise their utmost ingenuity in devising and using appropriate substitutes for building products made scarce by reason of defense priorities.

Rent Control

Rent-control legislation is not a substitute for an adequate and balanced housing program, nor a remedy for a shortage of housing. However, in an emergency economy subject to priorities and price controls, it seems impossible to avoid such legislation in some areas as a preventive of exploitation, of rising living costs, and of inflationary tendencies.

In some communities voluntary rent-control committees, preferably set up by, or in proper administrative relation to local defense councils, may be found helpful in the interim pending the enactment of rent-control legislation, or as a permanent means of rendering such legislation unnecessary, but unless really efficient they should not be used as a device to postpone necessary legislative action.

Rent-control legislation should permit the widest possible latitude in meeting local conditions, but reasonable uniformity of application should obtain over areas presenting similar conditions, rather than being limited by political boundary lines. The legislation should be devised and administered in such a way as not to discourage needed new construction. In order to avoid some of the difficulties encountered with rent-control legislation following the World War, the Committee believes that consideration should be given to providing that rents should be fixed at prevailing levels as of a specified date, rather than by using a valuation basis. The legislation should provide that any increases in taxes or in operating costs beyond the control of the management should entitle the owner to corresponding increases in rents. Disputes arising in the application of the legislation should be handled, at least in the first instance, by administrative boards rather than by the courts.

Rent-control legislation by states is preferable to Federal legislation; but there should be some Federal enactment to apply to defense areas in states which do not, either before or after such Federal enactment, adopt adequate rent-control laws.

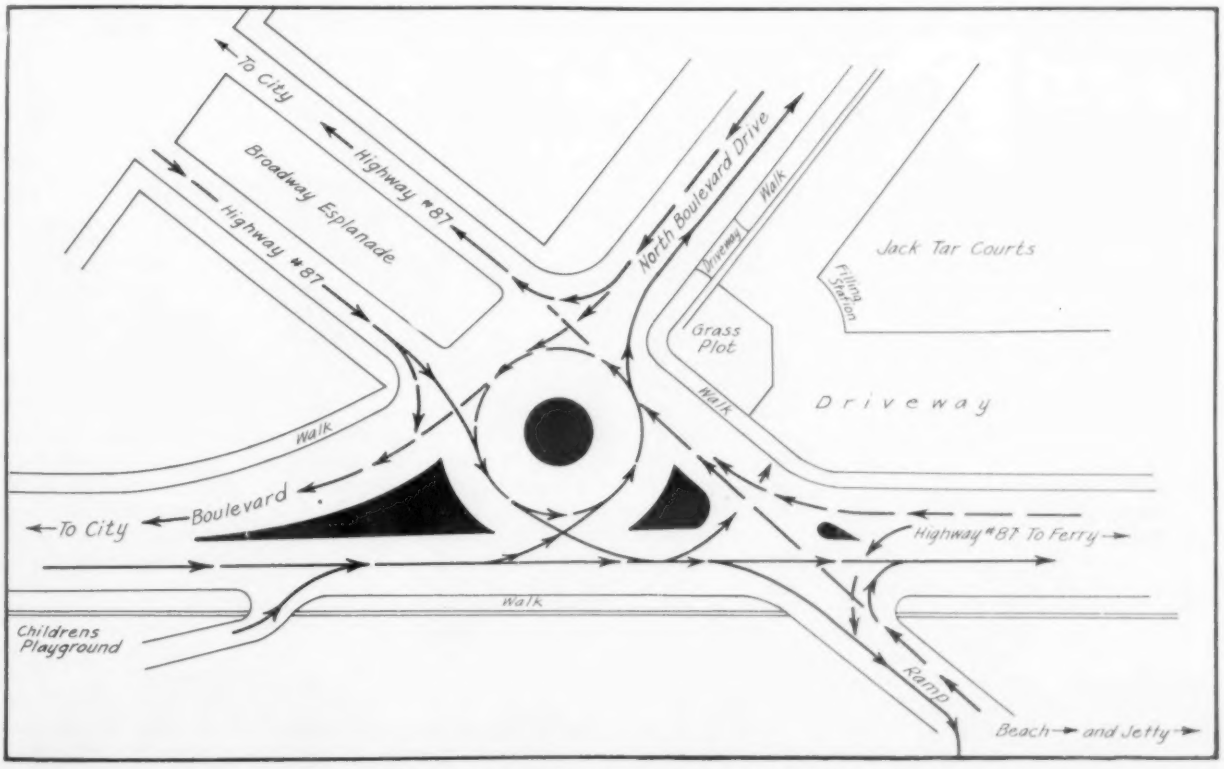
Knotty Traffic Tangle Solved by New Circle

Galveston, Texas, Constructs Large Circle and Islands to Handle Traffic Approaching Boulevard and Beach

TWO of the major traffic arteries of the great tourist city of Galveston, Broadway and North Boulevard Drive, converge at the sea-wall Boulevard at a point where two ramps lead to the beach. Thus, sight-seeing traffic entering the Boulevard from Broadway on Highway 87 leading east to the coastal ferry, those driving the four-lane sea-wall Boulevard, and those seeking recreation at the children's playground on the beach or intending driving east on the hard sand to the jetty to fish, cross at this intersection. No combination of traffic lights seemed possible to move the very heavy traffic with sufficient rapidity, and the services of several policemen were required to prevent tangles which had badly tied up traffic in the past.

The solution came through the designing of a 50-foot diameter traffic island and three smaller triangular islands to channelize traffic. The accompanying sketch made from the plan of W. B. McGarvey, City Engineer, and approved by George H. Gymer, Commissioner of Police and Fire, shows the ease with which traffic now flows through the intersection after construction of the traffic islands and channelizing islands was completed. Traffic in two lanes approaching the Boulevard on Highway 87, which is Broadway, may turn immediately right and enter the three-lane traffic to the Boulevard heading west, or may swing around the traffic circle and head toward the ferry in four-lane traffic around the circle, and then three lanes east toward the ferry, or in two lanes down the ramp to the beach and thus to the jetty. As one more example, traffic driving west on the sea-wall Boulevard in three lanes must swing right of two channelizing traffic islands and then left around the traffic circle if it wishes to continue on the sea-wall Boulevard, or straight ahead if it wishes to go to the city via Broadway or right into North Boulevard Drive.

The end of the Broadway Esplanade, close to the traffic circle, is a solid concrete wall about 4 feet high. As so many vehicles in the past have been driven into this wall, it is now painted with diagonal black and white stripes to increase its visibility. When the project of creating rotary traffic at these intersections was undertaken, there was not sufficient money to build the desired 50-foot-diameter traffic island, so a temporary expedient was sought. For the present this circle is outlined by a ring of large truck tires painted white, which



The New Traffic Circle Which Solves a Bad Situation on the Sea-Wall Boulevard at Galveston, Texas

will serve their purpose satisfactorily until a more substantial concrete curb with appropriate planting is provided.

Left turns are permitted only as shown by the traffic arrows on the map, and no left turns are permitted when entering the sea-wall Boulevard from either ramp. Westbound traffic on the sea-wall Boulevard must go around the Island, this being the only traffic which is disturbed in any way as to direction, with the possible exception of traffic entering the intersection from Broadway and wishing to go north on North Boulevard Drive. This traffic must go about two-thirds of the way around the circle before it can swing into the Drive.

Although use of the main entrance to the automobile courts involves crossing five lanes of traffic, it was not thought advisable to forbid the use of this entrance and to require the use only of the entrance on North Boulevard Drive.

Fire Protection and Urban Decentralization

MORE effective cooperation between agencies concerned with fire prevention and protection and those concerned with city and regional planning was strongly urged at the annual convention of the National Fire Protection Association, in Toronto, on May 14, by the Association's Committee on City Planning and Zoning. Pointing out that the methods of modern warfare have given planners and fire prevention and protection engineers new aspects of old problems to think about, the Committee's report, submitted by Chairman H. C. Klein, of New York, said in part:

"In view of the technique of modern total war, modern defense principles tend to substantiate the planning principles for which city planners have long contended and which we have learned to be in the interest of fire prevention and protection. For example, the spacious type of residential layout which we have commended again and again as constituting good planning and good fire-defense practice, coincides with the principles of construction for safety against air raids. Strong support for the larger building lots which planners have sought through zoning may be one result of the application of modern defense principles. . . .

"In the United States, decentralization has been condemned by planners because it has resulted in the growth of blighted areas with all their attendant evils, including the increased peril of fire and the increased cost of fire protection. Even now many large cities are devising plans for arresting the process of decentralization, the while they are studying means of rehabilitating areas depreciated by the outward movement of population which is resulting from the increasingly unsatisfactory living conditions in their central areas and the widespread use of automobiles.

"Which policy should prevail? Decentralization to minimize the effects of modern total warfare, or centralization to prevent the peace-time evils of blight? Which policy will best promote the general welfare, and to what extent should considerations of fire prevention and protection determine the choice?

"If this committee may be permitted to offer a tentative opinion at this time, it is that a distinction must be drawn between planned and unplanned decentralization. We believe the blighting effects of decentralization in large cities have been largely due to the unplanned type whereby the unintelligent, uncontrolled and speculative over-subdivision of land for residential purposes on the outskirts of cities, the lack of zoning and minimum housing standards, and the improper timing of construction of street and transit improvements, have resulted in the scattering of population which has left behind depreciating areas and has increased the costs of the governmental services which must be supplied in both old and new sections. If, instead, the process of decentralization is intelligently timed and planned by creating, wherever practicable, so called satellite communities separated from each other and from their metropolis by wide belts of open land, and if concurrently a program of gradual rebuilding of run-down areas into livable neighborhood units of low population density is followed, we believe that a large measure of the decentralization which is desirable in war-time will be attained without the disadvantages resulting from recent unplanned decentralization.

The World We Want

Local Governments Must Play Their Part

AS the shadows of the second world war deepen, the Commission to Study the Organization of Peace* is giving distribution to a statement of principles which merit the careful study of all who believe that we must not only combat aggression, but must also plan for peace.

That local and national governments must play an important part in building the kind of world we want, is stressed in the report:

"As the frontier of continents has disappeared, its place has been taken by the frontier of science, and no one can foresee the effect which the indefinite extension of its borders will have upon mankind. But, no matter how much his life will be changed by invention and discovery, man will continue to want from this world freedom, social justice, economic and political security. He wants a world in which human intelligence will organize and distribute the ample resources of nature so that all can live abundantly; a world in which intelligence will be devoted to human progress rather than to destruction; a world in which a man's labor may be directed toward his own advancement. This is largely a problem for local and national governments, but they cannot solve it alone. The laboring man knows that his living standards are affected by the living standards of other countries; the agricultural man must face the fact that he can dispose of his crops only in a world-wide market; the industrial man may find his factory idle because of inability to secure needed materials, or markets, in other lands. These, and many other matters upon which the happiness of the individual rests, are problems which can only be solved internationally.

"If we have the courage to lift our eyes above the agony of the moment, we may see a world in which the forces of applied science and the diffusion of knowledge offer to all men and nations a plane of living, a freedom and richness of spiritual, cultural and economic attainment that can scarcely be imagined at the present moment."

* Organizations sponsoring the Commission are: American Association of University Women; American Union for Concerted Peace Efforts; Church Peace Union; League of Nations Association; National Board of the Young Women's Christian Associations; and the World Citizens Association. Prof. James T. Shotwell is Chairman, and Clark M. Eichelberger, Director; office, 8 West 40th Street, New York.

Primary Sewage Treatment at Wisconsin Rapids, Wis.

New Intercepting Sewers Deliver Sewage to Plant; Sludge Digestion, Filtering and Incineration Used

By JOHN W. TOWNSEND
Jun. Am. Soc. C.E.
Consoer, Townsend & Quinlan,
Consulting Engineers,
Chicago, Ill.

AS A portion of the clean-up program of the Upper Wisconsin River instigated by the Wisconsin State Board of Health and the Stream Pollution Committee in 1936, the city of Wisconsin Rapids, Wis., has recently completed the construction of an intercepting sewer system and a sewage-treatment and incinerator plant for the purpose of eliminating stream pollution in the Wisconsin River.

Wisconsin Rapids, of approximately 11,500 population, is situated on the banks of the Wisconsin River near the central part of the state and is famous for its paper-mill industry. Prior to the year 1905, this community, which is divided about equally by the river, was two separate towns known as Centralia and Grand Rapids.

Wisconsin Rapids is served for the greater part by a system of combined sewers totaling about 192,000 feet in length, which prior to June, 1940, discharged sewage into the river at fifteen points. During flood stages of the Wisconsin River these sewer outlets and a portion of their tributary sewers were subject to back-water flooding, the extent being dependent upon the river stage. During the more normal stages the outlets were above river level.

Preliminary Studies—Flow and Population

In December, 1936, and January, 1937, numerous sewage-flow measurements made in the majority of the main sewers outletting into the Wisconsin River indicated that the sewer system receives a large volume of ground water through defective sewer-pipe joints, construction joints, porous construction materials, and breaks in the sewer barrel and manholes. Studies indicated a ground-water infiltration rate equivalent to 1,895,000 gallons per day, or 172 gallons per capita. The total per capita rate, sewage plus ground water, being equivalent to 248 gallons (172 gals. plus 76 gals.), is a somewhat higher figure than that which obtains in the average municipality, the ground-water inflow being more than double that of the per capita water usage.

For the purpose of treatment-plant design, it was considered that a per capita rate of 250 gallons per day would be adequate, inasmuch as some 13 years might elapse before design capacities would be realized, and additions could be made at some time prior to the year 1950. It was further assumed, as has invariably been the case in other municipalities, that improvements by the city to the existing sewer system will continue to be made in the future to a greater extent probably than in the past.

With the 1937 population estimated at 10,900 persons projected to the 1950 period, following generally the rate trend from 1900, a population of 13,500 persons as of the year 1950 was indicated. Thus, for design purposes, an average flow rate of 3,375,000 gallons per day (13,500 by 250 gals. per capita) was used; the corresponding maximum and minimum rates being estimated at 3,874,000 gpd and 2,848,000 gpd respectively, these indicated maximum and minimum rates being somewhat more disproportionate to the average rate than is the case where ground-water infiltration is present in lesser quantities.

Character of Sewage

	East Side	West Side	Composite
Total solids	272	402	332
Soluble solids	147	327	235
Suspended solids	125	75	100
Ash	132	276	204
5-day B.O.D.	110	122	116

Samples of sewage were taken in four sewers located on the West Side and three on the East Side. Composites were prepared, and the

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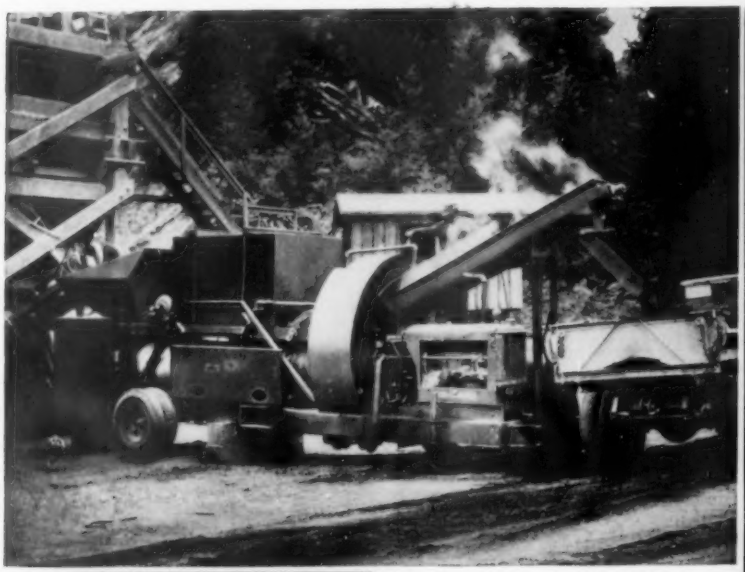

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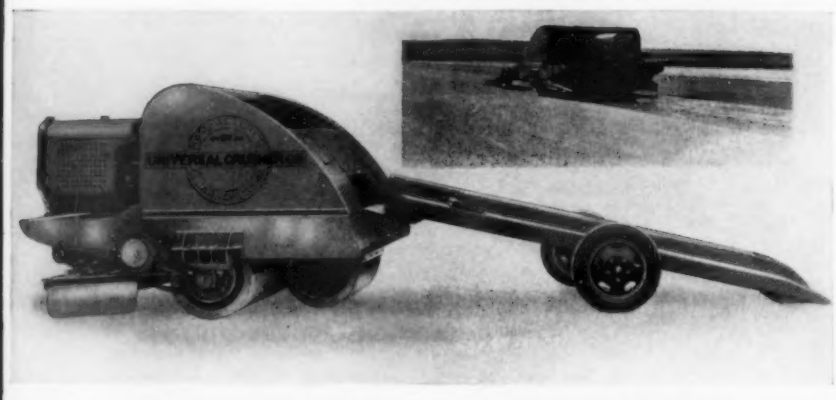

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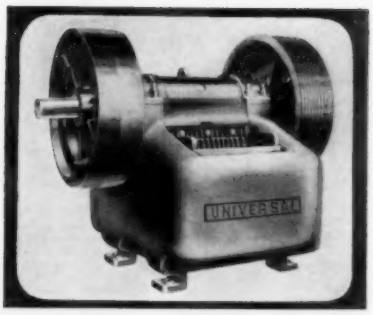

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analyses are as above, the results being expressed in parts per million.

Intercepting Sewer System

Construction of the intercepting sewer system along both sides of the river was started under the Works Progress Administration in June, 1937, with WPA furnishing all the labor and a portion of the materials of construction. This system, totaling about 13,000 feet, collects sewage from the fifteen main outlet sewers by means of concrete intercepting chambers. By an intercepting malleable iron gate housed by each of these structures, all dry-weather sewage flow is diverted to the intercepting sewers with such portion of the storm flows as will not exceed maximum dry-weather flow rates. Backwater gates have been provided in the chambers as a precaution against inflow of river water into the intercepting sewers during high water.

The east side intercepting sewer extends along the east river bank for a distance of about 4,200 feet to the Dewey Street lift station. Six hundred feet of this sewer is below the river bottom and was installed in a cofferdam. Pumps and double underdrains beneath the pipe aided in maintaining a dry trench while the pipe was being laid and the concrete cradle poured.

The west side intercepting sewer extends for a distance of about 8,800 feet to the sewage-treatment plant, which is located in the southern part of the city about 700 feet west of the river bank.

Construction work on the Dewey Street lift station began in January, 1939. The substructure is of reinforced concrete and is circular, being 20 feet in diameter and extending 28 feet below the finished outside grade. A partition wall of reinforced concrete separates the wet well from the pump well. The superstructure is square in shape and is constructed of brick and cut stone.

The lift station houses three Chicago vertical type sewage pumps with Westinghouse motors, two of which are rated at 500 gpm and one at 1,000 gpm; one 15-inch Chicago comminutor and an emergency hand-raked bar screen; a Builders Iron Foundry venturi tube and recording meter which indicates, integrates, and records the sewage flow through the station; circuit breakers, motor starters, and other appurtenant electrical equipment. A high-water warning alarm equipped with batteries was also installed.

The three sewage pumps, which are automatically controlled by means of adjustable alternators, pump the east side sewage against a head of approximately 58 feet across the 1,400 feet Chicago and Northwestern railroad bridge through a 10-inch cast iron insulated force main which discharges into the west side intercepting sewer at the west end of the bridge. The force main is supported by brackets which are cantilevered out from the bridge structure. A walkway along the pipe line was constructed as a means of servicing the pipe. Anchors, expansion joints, and rollers under the pipe allow for expansion and contraction. The lift station and force main structures were completed and accepted by the city in October, 1939.

Sewage Treatment and Incinerator Plant

The sewage received at the treatment plant flows through two 25-inch Chicago comminutors and directly into an underground receiving well in the main control building. From this well, three horizontal Chicago sewage pumps of 1,000 gpm, 2,000 gpm, and 3,000 gpm capacity, each with Louis Allis motors, intermittently elevate the sewage to a Jeffrey mechanically operated grit-removal chamber in which inert or inorganic sewage materials are precipitated and removed from the sewage. The grit chamber is 2 feet wide, 3 feet deep, and about 57 feet long, and is equipped with a mechanical horizontal bucket conveyor which travels at the rate of 5 feet per minute along the bottom of the chamber and collects the settled grit; the grit being carried up and out of the chamber, dewatered, and hauled away.

From the grit chamber, the sewage flows through eight sluice-gate controlled pipe outlets into two flocculation chambers, each being 27 x 22 feet in area, with a sewage depth of 8 feet. The Jeffrey flocculation equipment consists of four rows of paddle-wheels attached to horizontal shafts mounted parallel to the flow of sewage, and imparts a velocity of from 1 to 1½ feet per second throughout the tanks. The purpose of this equipment is to keep the sewage solids in suspension over the entire flow range and coagulate the solids so that they will settle more readily in the sedimentation tanks.

After the sewage has been retained in the flocculation tanks for a period of about one-half hour, it continues by gravity into two sedimentation tanks designed for a detention period of two hours each, based on the design average flow of 3,375,000 gallons per day. The tanks, which are 27 x 83 feet, with an average sewage depth of 8½ feet, have Jeffrey straight line sludge collector units which scrape the settled sludge into hoppers at the influent end.

Following the passage of the sewage through the sedimentation tanks, the liquid portion may be passed either directly into the river through an outfall sewer, or through a chlorination tank prior to its discharge into the river. The chlorination tank is provided to receive the effluent from the sedimentation tanks for the purpose of there mixing with it liquid chlorine in an amount sufficient to effect effluent sterilization prior to its discharge into the receiving stream controlled by a Wallace & Tiernan chlorinator. Chlorine sterilization is practiced only during the summer months when low-water stage prevails, and at such other infrequent times when it becomes necessary to by-pass sewage around the sedimentation tanks.

Sludge Digestion

The sludge which settles upon the bottom of the sedimentation tanks, as previously mentioned, is continuously or intermittently scraped by mechanical means into hoppers at the influent end of the tanks and thence into a raw sludge well. From this point it is removed by two Chicago centrifugal variable-drive sludge pumps of 0-50 gpm range each and delivered to a closed hot-water heated 55-foot diameter sludge digestion tank 20 feet deep, and equipped with a

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PFT floating cover. Herein fermentation and gasification of the volatile content takes place, the gas thus formed being utilized as fuel for heating the digestion tank circulating water; a 75-hp Climax gas engine which drives a 50-kw Allis-Chalmers generator, thus furnishing power for the electrical equipment; for firing the sludge incinerator; and for heating the main control building.

Sludge digestion and gasification proceeds continuously and it becomes necessary from time to time to remove from the digester that portion of the sludge which is well digested, in order that continuously produced fresh raw sludge may be accommodated in the tank. The digested sludge contains from 90 to 95 per cent of water, in which condition it is a flowing mass, and, while the digestion process reduces the initial raw solids volume by 40 per cent or more, its physical and mechanical characteristics are still such as to necessitate further volume reduction before its handling and removal to a disposal point.

The next step in the volume-reducing process is accomplished through the use of two 4-foot diameter Conkey vacuum sludge filters which reduce the sludge water content to approximately 70 per cent. The filters were sized on the basis of 5 pounds of sludge (dry basis) per square foot of filter area per hour. The dewatered sludge cake is scraped from the filters and deposited on a reversible belt conveyor, which is located between the filters, and fed directly into the top of the Multi-Zone sludge incinerator. When the incinerator is not in use, the belt conveyor is reversed and the sludge cake is deposited into a steel sludge storage bin with a double leaf bottom. Trucks may back under the bin, load, and haul the sludge cake away for use as a low-grade fertilizer or fill.

Sludge Incineration

As previously stated, the sludge cake is fed into the top of the sludge incinerator. This furnace is of the multiple-hearth type having four burning hearths and consists of a cylindrical steel shell 9 feet 3 inches in diameter, 12 feet high, and supported on steel columns. The interior of the shell is lined with insulating block and firebrick, and the hearths are of arched brick construction. Within the incinerator are special steel alloy rabble arms with teeth which rotate and scrape each of the four hearths. The teeth are constructed so as to keep turning the sludge over and drop it from hearth to hearth as it burns. From the bottom hearth the ashes are dropped through an ash chute into the boot of a vertical bucket conveyor. The conveyor carries the ashes up to the second floor and drops them into a steel storage bin. The bin has a spout through the building wall from which trucks can be loaded and the ashes hauled away for disposal.

The incinerator can be fired either by gas or oil by means of combination gas and oil burners at each hearth, the amount of fuel required being dependent upon the volatile content of the sludge cake to be incinerated. The temperature of the incinerator is controlled manually at each hearth and in the flues and stack by means of counterweighted draft dampers. The temperatures are indicated through the use of Engelhard thermocouples, installed at each of the hearths and flues, which are wired to an indicating pyrometer mounted on the electrical control panel in the filter room.

The incinerator was designed to burn 875 pounds of sludge cake per hour. Final tests upon completion of the incinerator installation indicated that the incinerator would burn approximately 1,000 pounds of sludge cake per hour at 70 per cent water content without smoke or odor nuisance.

The main control building, the exterior of which is of face brick and cut stone, has two stories above grade and two basement levels below grade. The inside dimensions are 30 feet by 50 feet with a 16-foot by 16-foot wing on the north end which houses the sludge incinerator. The interior walls of the building are of buff-colored glazed tile. The floors are of tile red-colored concrete, and the floor base is of black-colored concrete which blends well with the colored floor, tile walls, and cream-colored concrete columns and ceilings.

Within this building are located the office, laboratory, toilet and shower room, two-car garage, chlorine room, filter room, workshop and chemical storage room, engine room, incinerator room, screen room, and pump room.

The office, where the plant library and records are kept, is equipped with a steel desk, file case, and bookcase. A high-water alarm, an electric clock, and a Brown Instrument Co. liquid level indicator which indicates the liquid level in the wet well, are located in this room.

The laboratory contains two laboratory tables built of steel with acid-proof tops, desk, reagent rack, peg board, iron water still, 6-cubic-foot refrigerator, drying oven, muffle furnace, fume hood with an exhaust fan, water bath, 6-cubic-foot incubator, balance case, scales and weights, and numerous chemicals, glassware, and appurtenant laboratory equipment.

The chlorine room is located on the second floor and houses the chlorinator which distributes liquid chlorine to the chlorination tank. As precautionary measures, a 4-inch curb has been placed at the door of this room and an exhaust fan installed. The fan is controlled from the second floor hallway.

The engine room is at the first level below the main floor, and houses the two raw-sludge pumps, digested-sludge pump, Builders Iron Foundry metering equipment for both sewage and sludge, Worthington gas compressor, protected water system, gas- and oil-fired Fitzgibbons hot-water boiler, and a 75-horsepower gas engine generator set. Also in this room is the electrical control equipment for all the outside motors and engine room and pump room motors, as well as the synchronizing equipment for the generator set. Gas meters and pressure gages have been provided for each unit utilizing gas.

The entrance to the screen room is from the outside of the building. This is where the sewage first enters the plant. The sewage flow entering here is regulated by a 30-inch Iowa gate-valve electrically operated by Cutler Hammer controls. The valve is controlled by a push-button station in the engine room and also may be controlled manually by means of a hand wheel at the top of the valve standard. The

(Concluded on page 73)

TWO WORDS

Solved This Sewer Problem

Two words, SPEED and DURABILITY, held the answer to this tough sewer problem. Speed was essential because the collapsed sewer was endangering private property. Engineers met both requirements by using Asbestos-Bonded ARMCO Corrugated Pipe to make a permanent replacement in only 18 hours. The expense and trouble of resorting to temporary emergency measures was averted.

The same features of ARMCO Pipe that contributed to this exceptional speed bring many advantages in normal sewer installations. ARMCO Pipe is light in weight for easy handling and low-cost hauling. Yet thanks to flexible, corrugated design, there is little danger of structural failure. And a full, special bituminous coating assures utmost durability under even the most severe sewer conditions. This coating is tightly bonded to the galvanized ARMCO Ingot Iron base metal by ARMCO's Asbestos-Bonding process. A thick bituminous pavement protects the bottom against erosion.

Try Asbestos-Bonded ARMCO Pipe for new sewer lines as well as for repairing old ones. It will save you time, worry and future maintenance expense. Write for the facts. ARMCO DRAINAGE PRODUCTS ASSN., 5033 Curtis St., Middletown, Ohio.

Quick replacement of this failed sewer was needed to prevent further property damage. Yet economy dictated that corrective measures be of a permanent nature. Asbestos-Bonded ARMCO Pipe was the practical answer.

In 8 hours a new trench was dug and 188 feet of Asbestos-Bonded ARMCO Sewer Pipe delivered to the job. Ten more hours was required to install the pipe and complete the backfilling. Sturdy band couplers joined pipe sections into a continuous conduit of balanced strength and design.

ASBESTOS-BONDED

ARMCO SEWER PIPE

Do you mention THE AMERICAN CITY? Please do.

"Belonging"*

To Revive the Old American Heritage of Community Spirit

By David Cushman Coyle

TOO many people in America are lonesome. Everyone who is in his right mind wants to belong with other people, and if he doesn't belong anywhere, he is unhappy. Having too many people who feel lost and unhappy is a danger to our nation. We may lose our freedom and come under the terror of the Nazis, like so many other nations, unless we can give each other the satisfaction of belonging and standing together.

The American people, like practically all the civilized people in the world, are more lonely and unhappy now than they were fifty years ago, before we had movies and radio and automobiles. Fifty years ago, our grandparents lived in small places, even when they lived in cities. There were no automobiles, not many hard roads, and to get five miles from home and back was a real journey. Children walked to school, families walked to church. There were plenty of chores to do, even in town, so no boy or girl had any doubt of belonging to the family.

This country was full of neighborhoods, places where families knew each other pretty well. There were parties in houses and sociables in the church, where the same people met often enough to feel that they belonged together. When anyone was sick, the neighbors all knew about it and helped out any way they could. The church was the center of the neighborhood, where people met on Sundays, and often on week days, and where the members took part as friends in the ceremonies of baptism, of joining the church, of marriage, and of death.

Most people never thought they were especially happy in these little neighborhoods, or that by escaping from them they were going to make themselves homesick. But millions of older people in this country today are homesick for the old days. Even if they still live in the same house where they were born, the neighborhood has dried up. Millions of young people are unhappy without knowing why, because they don't remember ever belonging to anything.

The fact is that when we got automobiles and hard roads, and could travel forty miles more easily than our grandfathers could travel five, the neighborhood grew so large that it fell all to pieces. Many country churches died, the old-fashioned picnics and spelling bees and church fairs disappeared. People can drive ten miles into town to a movie and sit in an audience where they don't know anybody. When they get home they have had a good time, but there is something missing. People don't belong to a movie.

To Get Over Being Lonesome

One way to get over being lonesome is to join something. Americans are great joiners. There are thousands of clubs and committees and teams of all kinds, and most of the members are there because they like to belong to something. But sometimes even a lodge or a club leaves you lonesome when you go home. You still wonder whether anyone outside your immediate family really cares if you are married or unmarried or sick or well or get a raise or lose your job, or live or die.

The old American heritage of community spirit has been partly lost and we need some headwork to get it back. What can be done to bring back the feeling of belonging to the community?

Five years ago, the Farm Bureau in Ohio asked a few farmers and their wives to invite a dozen of their neighbors to come in for an evening once a month, to discuss things in general. The latter part of the evening was for refreshments and just talk. Now there are 600 such meetings in Ohio every month and everybody comes. What makes them come? They come because in trying to find out how to help their community, and then eating together, they have discovered their neighborhood again. Those who remember what it used to be understand how it is that they like coming to these meetings. As one farmer said, "Our getting together and working together has made all of us realize that we have the best neighborhood in the country. I guess I'm kind of proud to belong to it."

Recreation, Health and Housing

National defense calls for a lot more than military service or even defense production. There are hundreds of kinds of service that need to be done in every county and city in the United States. Someone needs to organize recreation, for instance, for soldiers and workers and their families. Above all, we need an all-out attack on sickness and accident. People talk about strikes holding up defense. Sickness and accident are the biggest obstacle we have. They cause several times as much lost time as strikes, and they can be cut in half if we all pull together.

The Government has started a nation-wide attack on death and disease, beginning with the boys who were rejected in the draft, and spreading from there all through the population. Home defense programs are a good chance to build community services and neighborhood spirit.

Housing for defense workers and housing for others who are now in bad surroundings, must be pushed as fast as possible. In fact, as we grow more and more used to the kind of total defense that must be built up in America, we shall come to realize that every kind of action that strengthens the people and the community is an addition to the strength of the nation.

The Government is promoting defense housing, public health, and home defense on many fronts. It is

* Chapter 11 of Mr. Coyle's new 25-cent book, "America," copyright, 1941, by the National Home Library Foundation, Washington, D. C. (See page 111 of this issue.)

Water Main Cleaning and NATIONAL DEFENSE

★ ★ ★

Just now—when vast sums are being diverted to the National Defense program—perhaps your City is *more than usually interested* in ways and means of *paring expenses* without *im*pairing services.

Perhaps, too, you are facing *unprecedented demands for water service*—from thousands of new consumers—defense plant workers and their families and nearby army camps.

Your City can avoid immediate appropriations for pipe line extensions, power bills, etc., by checking up on the water distribution system and, wherever *clogged* mains are found, putting them back in condition to deliver their maximum flow—*by cleaning.*

THE NATIONAL METHOD of water main cleaning has saved hundreds of cities many times its cost. Our organization, with equipment to meet every pipe cleaning condition, developed through long years of experience, will handle the cleaning to your entire satisfaction, at minimum cost consistent with good results, and with minimum shutoff of services.

In case of wartime attack every City should be ready to fight fires, which *might* break out simultaneously in different sections of the City! Fighting these fires would require abundant water supplies, immediately available.

War or no war, it is important that every existing pipe line be put in condition to provide its maximum flow. *Clogged* mains, if any, should be *cleaned* by—

The NATIONAL METHOD

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Or main office:

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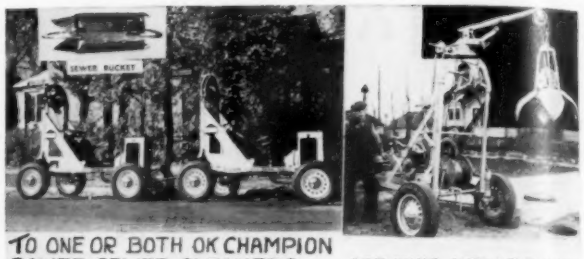

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IN ONE MOTOR POWERED SET

Two distinctly different but related jobs all done by one set of equipment.

Your purchase costs cut more than 50%. New machines that round out completely your sewer department equipment and save you real operating expense.

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You cannot afford not to know all about this new "Goodbye to the long handled shovel."

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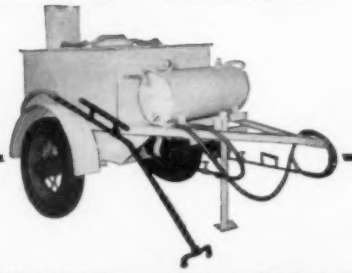

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Many sizes. Write for catalog.
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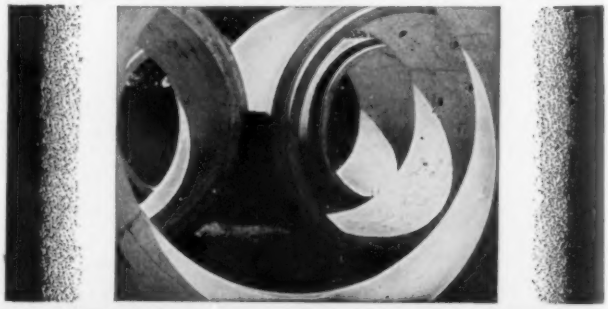

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LOCK JOINT PIPE CO., Established 1905 AMPERE, N. J.
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the Government's job to provide information and national leadership, but success will depend on the leadership and hard work of ordinary Americans in their home towns. This is a democracy in action, along lines that fit closely to the usual American way of doing things.

All sorts of organizations that are looking for something useful to do for defense, can find a place in these jobs of home defense service. Rotary clubs, athletic clubs, Scouts, social organizations of all kinds, can have the satisfaction of playing a useful part.

Church organizations are especially helpful in community work. This job of looking after community welfare is what the church grew on in the old days. Today we know twenty times as many ways to do the job, thanks to the advance of science and medical skill.

A Job That Will Never End

Health, happiness, and strength are the backbone of defense. The first things to give up for the sake of strength are idleness, sickness, loneliness, and the despair that comes from not having a chance to play a useful part. The Government has its part to do, such as organizing the health program. But each community and each family has also its own part to play, to watch every point of weakness where sickness or hopelessness can attack us and to build up the defenses of the community against those dangers at every point.

When military defense is over, home defense will still be as much needed as ever. There will be no end to the job of defending America against disease and unhappiness.

As a Great Planner Saw It

"I am led to reflect how much more delightful to an undebauched mind is the task of making improvements on the earth than all the vainglory which can be acquired from ravaging it by the most uninterrupted career of conquests."

GEORGE WASHINGTON.

Primary Sewage Treatment

(Continued from page 69)

screening equipment consists of two 25-inch comminutors and an emergency hand-racked bar screen.

The pump room is located 25 feet below the outside grade and houses the three raw-sewage pumps, float switch station, sump pump and an electric unit heater. Provisions have been made in the sewage piping and space allowed for future pumping equipment.

The intercepting sewer system, lift station and sewage-treatment plant were placed in operation in June, 1940, and formally dedicated by the city August 25, 1940.

COST ANALYSIS

Intercepting sewers	$392,958.27
Lift station and intercepting chambers	51,406.11
River crossing force main	18,791.75
Sewage treatment and incinerator plant	239,293.45
Total construction	$702,449.58
Preliminary land and right-of-way, legal and administrative, interest on bonds, engineering and supervision	28,706.90
Total cost	$731,156.48
City's share 44½%	$325,364.63
Government's share (WPA, PWA) 55½%	405,791.85

The sewage-treatment and incinerator plant, intercepting sewers, lift station, and force main were constructed under the direction of Carl A. Cajanus, City Engineer, and the City Sewerage Commission. The designing and supervising engineers were Consoer, Townsend & Quinlan, consulting engineers, Chicago, Ill. Edwin Johnson is the plant superintendent, and the writer served as resident engineer during the construction period, and acting plant superintendent during the three-month turning-up period of operation.

Street Maintenance Program

(Continued from page 57)

and tough, interlock under the roller and present an excellent nonskid surface.

The spray nozzles on the pressure distributors, on this surface work, are set so that the fan-shaped spray from each nozzle is at right angles to the center line of the roadway, as is customary. To prevent spattering of the curb with asphalt, the outside spray nozzle, adjacent to the curb, is turned so that the fan-shaped spray is parallel to the curb, and in addition a small stiff canvas curtain is hung on the end of the spray bar.

On WPA work a clever idea has been worked out to prevent spattering the curb with asphalt. A thin whitewash is prepared and the face and top of the curb painted with it. The asphalt that spatters on the curb is absorbed by the whitewash, and several hard rains will remove the whitewash and leave the curb clean and unspotted.

All street maintenance work is under the supervision of James J. Leahy, Superintendent of Streets and Sewers.

Sludge Gas for Power

(Continued from page 51)

Edison Co., a privately owned public utility.

In conclusion, the writer recommends from his experience for anyone contemplating a gas-engine installation a heavy-duty, slow-speed engine, the speed preferably between 240 and 400 rpm. In installations of 500 hp and larger, in one unit, oil-cooled pistons are advisable. Water-cooled exhaust valves are necessary in almost any size. Either an auxiliary gas supply or diesel interchangeable heads are recommended to even out the wider fluctuations in sewage-sludge production, and a gas holder to even out the smaller fluctuations.

—From a discussion at the Annual Convention of the American Public Works Association in Detroit, Mich.

Many millions of dollars of public funds are invested in supply lines constructed with large diameter cast iron pipe made by this Company. In making such pipe, nothing is left to chance: both science and experience are drawn on to determine strengths to meet stresses with definite margins of safety. For a cast iron line must live up to a high reputation—*a useful life of more than a century.*

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U.S. CAST IRON PIPE

Time to Streamline

Distribution Systems for Municipal Electric Utilities

By M. W. Smith
Vice-President in Charge of Engineering,
Westinghouse Electric & Manufacturing Co.
East Pittsburgh, Pa.

THE distribution investment has gradually increased so that it is more than half the total investment not only of municipal electric utilities, but of the private utilities as well. Utility engineers are devoting an increasing amount of their attention to this problem.

The power station with its large generating units has more glamor than the pole lines and invisible ducts. There is a thrill in building and operating an efficient generating plant, and the plant has received greater initial planning effort and more sustained attention and direction than the more prosaic distribution system. The power station entails an investment up to $100 per kilowatt of installed capacity, but the distribution system, where perhaps twice as many dollars per kilowatt of load is involved, has developed largely on day-to-day decisions made by everyone from the operating engineer to the line foreman.

If we look forward to the next ten years, I believe that much of our effort will need to be applied to the distribution systems in areas such as small business districts in urban communities, business districts in small towns, high-class residential areas, and the like, having a load density of from 500 to 5,000 kva per square mile. These areas do not have a load density high enough to justify the downtown type of alternating-current network, but are being subjected to continued load increase that is tending to exceed the economical limitation of the simple radial system. In planning improvements in these medium load areas, we should heed the warning the late H. R. Woodrow made in a paper presented before this convention a year ago, in which he stated that "'Tiffany' service costs more than John Q. Public wants to pay." From a manufacturer's viewpoint, such an objective can be accomplished only by the use of simplified and standardized equipment made in production quantities.

In considering this middle-class load area, something should be done to eliminate the disadvantages of supplying load from single isolated transformer banks, which are inherent in the common radial system of distribution. The desirability of tying together distribution secondary leads has been appreciated for a long time because such an arrangement diversifies the load on transformers, improves voltage regulation, and reduces the possibility of light flicker. But this idea of paralleling distribution transformers has not been actively pursued, because adequate equipment that would remove some of the practical operating problems and still meet low-cost requirements was not available. It now seems possible to surmount these difficulties and limitations by adopting high production parts developed in recent years for other purposes, and applying them to uses I shall mention later.

Single-Phase for Light Loads

In these medium-load areas we are concerned with two types of distribution. The first type is the single-phase supply to residential and very small business centers, and the second type is the three-phase supply to the larger business districts.

Let us first consider what might be done to the ordinary single-phase system. In most cases it consists of a single-phase branch feeder, usually 2,400, 4,800, or 6,900 volts, to which distribution transformers are tapped at intervals of a few blocks. The low-voltage secondaries extending from these transformers meet about half-way between transformers, but are not connected together. This connection is not made, because a severe secondary short circuit will cause the nearest transformer fuses to blow, thus transferring the overload to the next units and so on until transformer fuses are blown successively down the street, like tipping over a row of dominoes. To prevent this so-called "cascading," additional fuses have sometimes been employed to tie these secondary leads together.

However, this method of paralleling single-phase transformers located along residential streets has not been popular because of the difficulty experienced with fuses. Fuses are hard to coordinate with the ability of transformers to carry overload, if there is no indication of their being blown, and if frequent fuse-blowing occurs, linemen, in effect, put a penny in the fuse by tying the secondaries through solidly and risk producing cascading when real trouble takes place.

The inherent advantages of operating single-phase distribution transformers in parallel can be realized by a new scheme of banking transformer secondaries. It requires using low-cost circuit breakers matched to the transformer characteristics instead of the troublesome secondary tie fuses. A suitable low-cost breaker is now available and is being built on a quantity production basis in connec-

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You get LONGER life . . . 80-100 more years of service . . . due to the proved ability of cast iron mains to resist corrosion. You get MORE net revenue! Cast iron mains eliminate leaks, losses, replacements. You get MORE for your money for cast iron mains retire their own bonds. A few pennies MORE per foot is all you pay for this extra service—and saving! Investigate.

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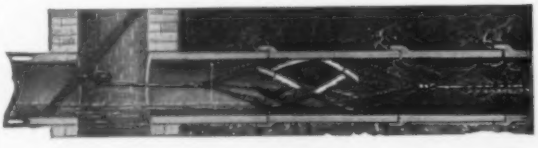
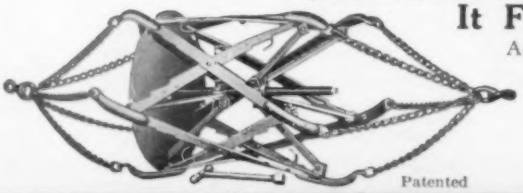


Open and in action removing roots and caked sediment like this.



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Adjusted in 30 seconds to fit any sewer from 8 to 30 inches.

Will clean the entire sewer wall, top, and sides as well as the bottom, cutting and removing the roots and caked sediment, putting the sewer system in almost 100% clean condition.

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108 East Walnut St. **Nappanee, Ind.**

tion with the development of the self-protected distribution transformer that has come into such general use within the last five years. It appears feasible to install a second circuit breaker of this type in these self-protecting transformers for the purpose of breaking up the secondary during trouble and in this way localize the disturbance by, in effect, removing a domino from the row. By placing this second breaker within the transformer tank it can be properly coordinated with the overload ability of the transformer while the present circuit breaker is used to obtain self-protection. It should be noted that with this arrangement the secondary tie point is moved to the transformer.

The paralleling of distribution transformers by any of the foregoing methods is frequently called "banking." The twin circuit-breaker type of banking transformer can also be inserted between two of the existing conventional transformers that are already in service to provide for local growth, and at the same time permit the secondaries to be paralleled. Experimental models of the kind of equipment I have just mentioned have been proved satisfactory.

Three-Phase for Heavier Loads

We may now consider possible improvements to the three-phase distribution used in the more heavily loaded community business centers, where an interruption of service to shoppers and movie-goers on the Saturday night following payday would be embarrassing. The three-phase network system so successfully used in metropolitan areas is desirable but too expensive for this class of service. Therefore some less expensive network method must be sought. At present in these community centers separate isolated transformers and secondary mains for the power and lighting loads are ordinarily used to avoid light flicker. For reliability, at least two feeders are commonly brought into the area with manual throw-over arrangements in case one feeder is in trouble. Thus we have available most of the elements for creating a light-duty, low-voltage network, with the exception of an economical network protector.

Two Feeders for Three-Phase

The distinction between the single-phase area power supply and the three-phase business section power supplies is that the latter require at least two feeders for reliability. The paralleling of the secondaries of transformers that are tapped off different feeders to form a network presents problems that do not exist in the previous case of banking single-phase transformers where all units are tapped off the same feeder. With two feeders supplying three-phase network transformers, a short circuit on one feeder will open its substation breaker, but this operation alone is not sufficient to remove the fault. The good feeder and its transformers continue to transmit power to the network, resulting in reverse flow through the transformers attached to the feeder in trouble. To completely clear the fault, each of these transformers must be disconnected from the network by action of reverse power devices in associated network protectors. The network protectors that are needed for this purpose are the heart of the three-phase, light-duty network.

Light-Duty Network

The metropolitan networks which we have already agreed are too expensive for the locations we are considering are supplied by four to twelve feeders, with transformers from 225 to 750 kva, so that in the event of one feeder being out of service, the load on the others is still low. In the lighter density areas, we must change this conception of a network and use only two feeders with 15 to 100 kva transformers arranged so that if one feeder is out of service, the other can carry the whole load over a peak period. The excess transformer capacity to meet these overloads can be kept to a minimum by loading the transformers on a copper temperature basis. This method, together with a simplified form of network equipment, should produce a system comparable in cost with the present radial system. Such a network can supply both motor load and lighting load from the same secondary owing to the improved regulation over the radial system, thereby reducing the number of wires on the poles and minimizing the likelihood of these pole lines being forced underground by ordinance.

The loading of transformers on the basis of copper temperature is an essential factor in making such a light-duty network practical. There is a well-established background for this practice, of which the self-protecting transformer with its built-in thermal breaker is representative. The fact that 60 per cent of our present distribution transformer production is now of this type is indicative of the strong trend toward loading by copper temperature.

Small Transformers Encourage Underground

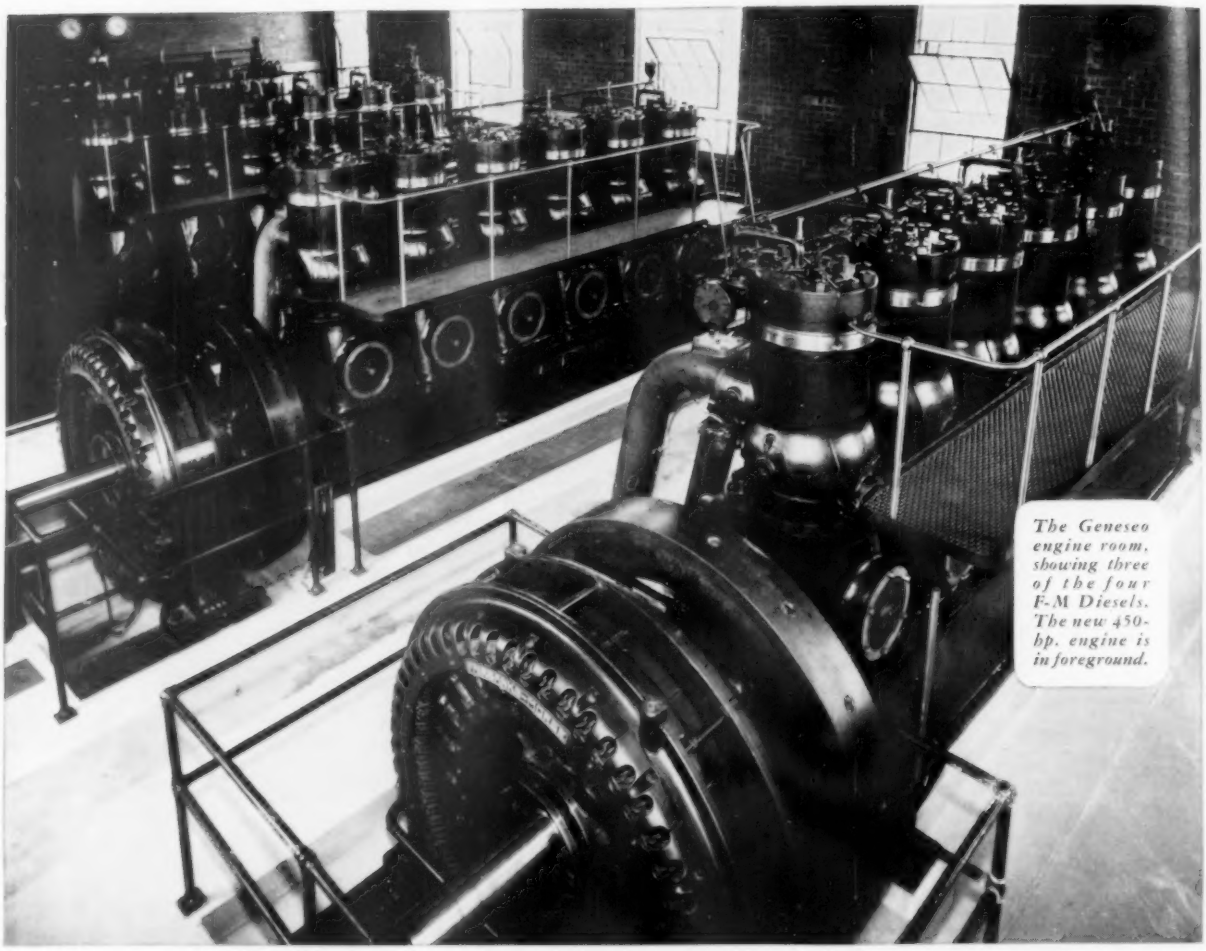
This ability to build transformers in smaller dimensions fits in with the desire for underground construction in the new high-class residential areas. One promising scheme now being tested consists of placing a standard transformer with minor modifications in a shell buried in the ground, eliminating any costly vault construction. The air space between the transformer and the shell is the essential element in transferring the heat to the atmosphere. The earth is not relied upon for heat dissipation because as it dries out it becomes a poor conductor of heat. When any product such as a transformer can be built smaller, there are inherent savings to the user in the storing, handling, and mounting of the lighter unit. Pole tops will have a neater appearance because tanks are smaller, and a cross-arm can be eliminated by including the equivalent of cut-outs and arresters in the self-protecting type of transformers, and by using recent improvements in methods of mounting, a safer, cheaper, better-looking installation will be attained.

It is obvious that each distribution problem must be given special consideration and individual treatment, depending on local conditions.

To summarize, it appears that there is much that can be done to improve service and to lower costs in the middle-class zone of our distribution system which is so tremendously important because it is a large and rapidly-growing part of the total distribution load and investment.

GENESEO'S F-M DIESEL DIVIDENDS:

30% Lower Power Rates—$14,300 Net Profit in 1940



The Geneseo engine room, showing three of the four F-M Diesels. The new 450-hp. engine is in foreground.

PROFITS from seven years of operating a Fairbanks-Morse Diesel generating plant have paid for a substantial portion of the $280,000 power and light system at Geneseo, Illinois. And these profits have been earned in the face of rate reductions totaling about 30%! This municipally-owned plant was put into service in 1933 in competition with a power company. Three F-M Diesels, one of 280-hp. and two of 420-hp., each direct-connected to an F-M Alternator, comprised the original equipment. For two recent years all three Diesels were required for peak loads, leaving no stand-by. Yet there were no service interruptions —a tribute to F-M Diesel dependability.

To permit handling even greater peak loads, a *fourth* F-M Diesel with F-M Alternator was installed in 1940. Like hundreds of municipalities everywhere, Geneseo had learned by experience that for economy in the continuous, heavy-duty work of power generating, it's wise to choose heavy-duty, slow-speed, two-cycle F-M Diesels. For slow speed means slower wear, and two-cycle design means fewer parts and less frequent, less costly servicing.

Find out just how profitably *your* city or town could generate its own electricity. Write Fairbanks, Morse & Co., Dept. H10, 600 S. Michigan Ave., Chicago, Illinois. Branches and service stations throughout the United States and Canada.

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How a Lecture Course Saved the Shores of Milwaukee County

(Continued from page 40)

pushed, and while we shall be bothered by a surplus of political units for some years, physically there will be but one Milwaukee, with its principal shore along the eastern boundary of Milwaukee County, and inland the several parked streams, each finding its way to the principal shore. When complete, there will be a shore system.

Four years ago, after the county parkways had excited the admiration of the people, a suggestion was made in the City Hall that the city park system be turned over to the county. The decision was left to a referendum and was carried by a large majority. Every move made by the county is calculated for the good of all the people, whether their home is in the city of Milwaukee or in any other political unit within the county.

We feel that by care in the provision of traffic ways distance becomes less a factor of importance. People will gradually move from congested areas spreading out along naturalized home areas provided. Industries will be more intelligently grouped and the same care of physical welfare will prevail as for homes. The word "profit" will be less used as the thought of equity comes to prevail.

Milwaukee County has rescued all but about three miles of the lake shore. Much of it has become permanently beautiful under public ownership. Most of the shore vandalism has occurred under or through private exploitation of some kind.

What is today part of the lake front known as Lincoln Memorial Drive, about three miles long, formerly consisted of a steep clay bank with a railroad on piles suspended about ten feet over the water and about as ugly a row of backyards as was possible. Today the railroad is so effectively screened by trees in variety that trains passing are scarcely noticed. Below this screen of trees is a wide auto drive. Outside is a sizable lagoon over which people in autos look over to the lake. Their view is diversified by trees in the foreground. It is far more beautiful than the original shore was ever known to be.

Erosion had taken much of the soil and made constant inroads. Some of us felt that something must be done to save our bluffs. So, quietly, a few set to work and obtained legislation providing an annual mill tax, and with it began efforts to save the shore. For several years the filling-in went on, and the lake currents brought in sand accretions, and when ready it was paved, and is today a scenic drive—a show-place to strangers and the pride of our citizens.

I feel that since the advent of the automobile every city within reach of a shore, together with a natural system of drainage—rivers, creeks and lakes—should spread over the whole drainage of natural waters. There remains no plausible excuse for a congested city. Every home should feel the environmental influence of natural shores with the essential forest support. We have only begun to appreciate the importance of spreading civilization to cover all shores.

Ignore the present political boundary lines of any city. I am sorry that some of our American cities have been perched, for several generations, right on the edge of an ocean and have remained circumscribed by an imaginary line called "the city limits," leaving thousands of acres of beautifully watered lands in their hinterland unappreciated.

Searching for Able Men to Fill Police Chief Positions

On the Theory that a city profits by throwing open its appointive positions to outside as well as "home town" candidates, two council-manager cities—Pasadena, Calif., and Two Rivers, Wis.—recently appointed new Chiefs of Police after nation-wide competitive tests, the International City Managers' Association reports. A third city—Flint, Mich.—is following the same procedure in seeking a replacement for its Chief of Police, who got the appointment in Pasadena.

The main qualifications set up by the cities which made the nation-wide recruitment are administrative ability and a knowledge of modern police administration. In requiring these qualifications and in lifting the residence requirement of candidates, these cities hoped to secure the best available men for their police chief positions, the Association pointed out, but local residents who ranked high in the tests were of course given equal consideration.

When Pasadena sent out notices about the police chief opening, 19 of the resulting 67 applicants met all qualifications, and 4 of them were members of the local police department. The candidates who received the highest ratings in the written test, however, lived in various parts of the country. They were visited by the City Manager of Pasadena and the chief examiner of a local civil service commission for personal interviews before selection was made.*

Two Rivers, a town of 10,000, recruited applicants for the police chief position from outside the city when it was found that no member on the local force had been well enough trained in modern police science to warrant the top appointment. Ten applications were filed, and four of the men were admitted to the physical, oral and written examinations. The written examination, based on test materials from other cities, examined the candidates' knowledge of police science, practice and general administration, identification and investigation, traffic safety and control, etc. The successful candidate formerly had been Director of Investigation in the California State Parole Office.

The city of Flint is looking for a man with nine years' experience in police work, at least five years as supervisor. The written examination and oral interview were held in Flint on July 29, and the three candidates making the highest grades will be certified by the Civil Service Commission to the City Manager, who will choose one of them.

* The American City, January, 1941, pp. 66.

Above: A 20-in. pipe line at Luling, Texas, before being cleaned with FLEXIBLE equipment. Right: The same line after the cleaning tool was run through.

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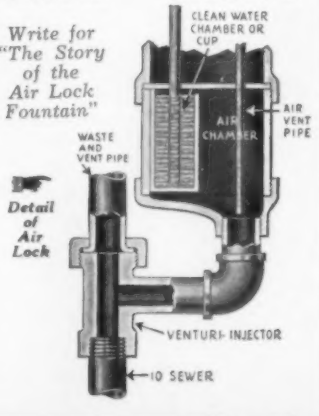

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City Planning in the Soviet Union

(*Continued from page 46*)

sites for planned construction work, embraced within the plan for the mutually conforming architectural solution of the various components.

Neighborhood Units

In the Soviet compositioning of towns and cities and of city architectural ensembles, the elements of the composition have acquired new content and new scope. Housing blocks, for instance, embrace the entire complex of municipal utilities services for the population—children's nurseries and kindergartens with playgrounds, sports pavilions, with sports grounds attached, and large acreages of greenery for hygienic and recreation purposes. Depending upon the type of city construction, the size of such housing blocks ranges from 15 to 37 acres. The density of the built-up area is reduced by 20-25 per cent. A task involved is that of a linked composition of intra-block spacing and intra-block landscape gardening, connecting with the municipal parks and with the reservoirs.

There is also the complicated task of expediently directing the flow of vast throngs during mass demonstrations of an intense and country-wide nature and controlling their organized filing past the tribune stands at the main architectural structure of the public square at the center of the city. Similar conditions apply to the planning of parks and industrial districts.

Each Project an Entity with Creative Variances

It should be noted that the architectural entity of urban highroads, public squares and embankments is best achieved, not in unitary architecture, but in an architectural ensemble integral in spirit and quality of style, at times more severe, frequently more animated, but always bracing, joyous and life-asserting.

With the general use of the method of work that has been described, and the unity of ideological directedness of the state and municipal projecting organizations, their creative trends are nevertheless adequately individual in treating the problems of architectural composition when planning and building-up towns and cities. These individual artistic features can be traced in various groups, mainly in the large centers; groups that have their own traditions in art, associated with the history of their development and with the specific features of their architectural styles.

This does not signify scattered variance in art; it is a result of purposeful creative quests for new art forms in municipal construction, proceeding on the foundation of the cultural heritage of the past, the achievements of modern technique, and the progress of national-cultural features in the carrying out of municipal construction work.

Defense Program Makes Necessary Careful Planning of Municipal Public Works

Local Government Officials in general are urging caution in the handling of public finances during the present defense emergency and, in many cases, are suggesting the development of "reservoirs" of possible public works projects which can be built for employment-creating purposes should such a program be necessary when the defense spending slows down.

To guide the nation's municipalities in preparing for the future, the Municipal Finance Officers Association of the United States and Canada recommends the following:

(1) Present curtailment of public improvements construction except where expansion is necessary in connection with defense activities; (2) maintain present public facilities in first-class shape; (3) adopt a pay-as-you-go policy to the greatest extent possible; (4) balance local governmental budgets; and (5) enforce rigidly the collection of taxes.

In a similar vein, the International City Managers' Association points out that many cities are handling the problem of local public works programs during the emergency period through long-term planning and programming based on principles developed during the last ten years by a number of local governments, including the Milwaukee School Board, the Cincinnati Joint Plan Board, and by New York City and Richmond, Va.

The principles include determination of public improvements needed; analysis of financial resources, commitments and expenses of the community; and preparation and recommendation of a practicable program or schedule of construction for the period adopted.

These principles have been tested successfully, the Association said, by demonstration projects carried out since 1939 with the help of the National Resources Planning Board by seven cities: Winchester, Mass.; Fargo, N. Dak.; Nashville, Tenn.; Kalamazoo, Mich.; Dallas, Texas; Spokane, Wash.; and Sacramento, Calif. A number of states also participated in the experiment, and reports were handed in recently by five of them—Idaho, Maryland, New Hampshire, Montana and Oregon.

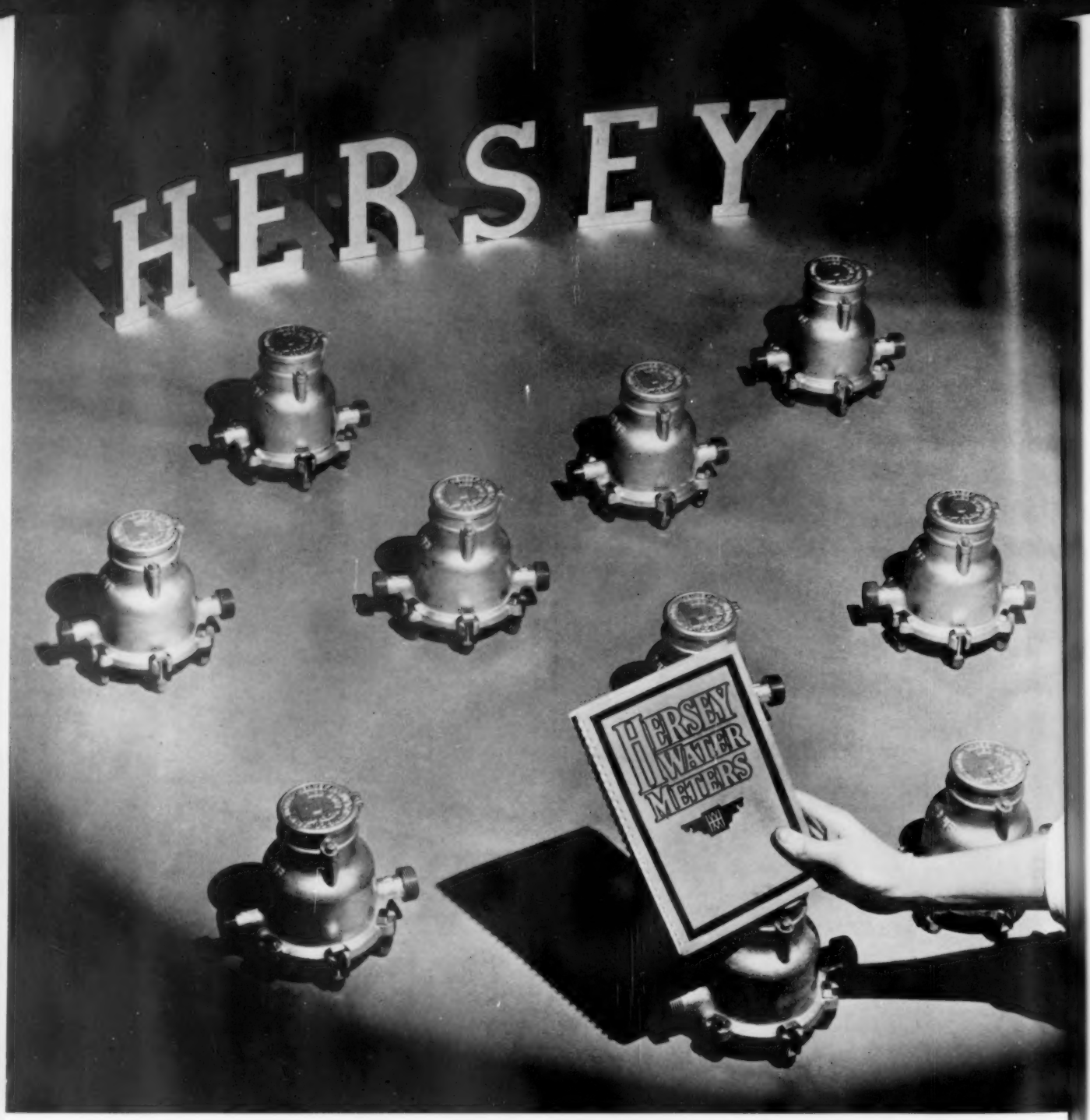
"Proper development of a long-term program for public works will place in the hands of public officials a device by which they can exercise judicious control of capital expenditures in terms of type of improvement and timing of construction," the Association said.

"This is significant because it enables a community to take advantage of a general economic situation by spending in times of depression and conserving in times of relative prosperity, such as the present.

"A unique feature of this type of programming is its provisions for an annual review and revision of a program to suit the changing needs of a community," the Association said. "At the time of the review an additional year is included in the program to replace the one just expired. The whole program moves along in orderly progression, meeting needs of the times."

Such a program also prevents special-interest groups from forcing ill-advised projects upon local government without careful consideration, and provides the city with a "reservoir" of projects which it may use to take advantage of Federal grants-in-aid if and when the projects become advisable.

Quote freely from The American City and please give credit in doing so.



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Forward Steps

Reported by Municipal Officials, Chamber of Commerce Executives, and Others

High-School Gymnasium Built for Community Use

DECATUR, ILL.—A new high-school gymnasium recently completed in a central downtown area of Decatur provides the students there with the most modern equipment and facilities for athletics and in addition, supplies ample space for community activities of almost every type. The "gym-community center," "conceived for the benefit of the community as a whole," will be used for all indoor athletic activities of Decatur High School, for basketball games of Millikin University, and for Parent-Teacher meetings, lectures, concerts and any other community activities.

The new structure, built of structural steel and reinforced concrete, consists of a lobby and gymnasium with two-story wings housing classrooms, club rooms, and a room for the Glee Club and band practice. The gymnasium is capable of accommodating 4,000 spectators for indoor sports, with space for from 500 to 800 additional spectators when the room is used as a theater. A stage, 36 by 90 feet, built into one end of the gymnasium, is large enough for almost any type of theatrical production. The basement contains an office and storeroom for the maintenance force, and shower and locker rooms.

The building, including equipment, cost about $480,000. Of this, the Works Progress Administration contributed $216,000, consisting chiefly of labor; the Decatur Board of Education provided the balance. The Board voted $125,000 in May, 1938, and paid the rest from funds at hand.

The architects for the building were Aschauer and Waggoner, and Charles Harris. The former were largely responsible for the design, the latter for the detailed work on the structural features, electrical, heating and sanitary equipment. Charles Harris also acted as the agent of the Board of Education in the purchase of materials and in the supervision of the erection.

W. L. HUFF,
President, Board of Education.

Lowering a Municipal Accident Record

MORGANTON, N. C.—For several years Morganton had such an unfavorable accident record that it was impossible to secure voluntary acceptance of workmen's compensation insurance by companies handling this type of coverage. As a result, the insurance was assigned to an insurance company by the North Carolina Industrial Commission.

The causes of such excessive losses can now largely be attributed to carelessness, thoughtless disregard for ordinary precautions to avoid accidents, and the effect which alcoholism has on the ability of the victim to think clearly and act quickly when working around equipment—a cause which has been eliminated by separating such employees from the city service. The other causes have been largely removed by a simple and effective method.

Realizing that no one benefited by accidents but, on the contrary, everyone lost, employees were first made aware of the disadvantages to them personally of the physical suffering, and even partial disability due to accidents; their loss of time from work, and partial loss of income; the loss to the city of their services, and the high cost of insurance due to a high accident record; the loss to the insurance company compelled to carry an undesirable risk.

The first step was to discuss with department heads the importance of instilling in their workers a safety-consciousness and the necessity for keeping the idea of safety constantly before them. Insurance company representatives have also talked about safety with groups of employees.

These efforts have been essential and very helpful, but it was decided to make it worth while to the employees to maintain a record free of accidents. Accordingly, it was proposed to allow each employee one-half day vacation with pay for each three-month period during which he had no accidents; this vacation to be in addition to the regular vacation allowed. Each employee was advised of the plan by means of a mimeographed notice.

A large poster was prepared listing all employees by departments, and placed where it would be frequently seen by nearly all city employees. Each month accidents and victims are stated. A smaller poster shows a comparison by departments.

The results have been very satisfying. The employees are taking great interest in keeping their records free of accidents and seem particularly anxious that no accidents be marked up against their names on the record poster. While the vacation reward may be partly responsible for this attitude, it is believed that rivalry between departments for the best record is also an important factor. In fact, the desire to preserve a clear record has led some of the employees to hesitate to report minor injuries, but this practice is discouraged because of possible

Exterior View of the Decatur High-School Gymnasium, and the Interior Used as Auditorium at the Time of Its Dedication

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The Simplex Type "MS" meter is of the mercury float, mechanically operated type. The direct application of differential pressures upon the float unit moves this in direct proportion to the flow rate providing uniform graduations and direct reading of indicator, chart, and totalizer. Available as an indicator, recorder and totalizer or as any combination of these functions, the MS meter can be furnished for wall or panel mounting, high or low head service, and with either segmental indicator or separate indicator as shown. Simplex "MS" meters are capable of measuring all flows over ranges of from 6½ to 1 to 20 to 1, within an error of ±2%. They can also be furnished for water float operation in conjunction with weirs and flumes.

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Simplex Type "S" Rate of Flow Controllers are of the balanced-valve type. Embodying in its design many unique features resulting in an accuracy of control within ±3% over a 5 to 1 range and of an unrecoverable head loss at the normal rate of less than 6" of water, the Simplex "A" Controller is available for gravity or pressure filter effluent or wash water service in sizes of from 3" to 24". Its simplicity of design and its arrangement of working parts makes the "A" Controller readily adaptable for clear well, filter, table or master control. The "A" Controller is also available for vertical installation, providing a means of reducing in many instances, initial plant construction costs by effecting saving in piping and excavation. The direct-acting features of the Simplex Controller insures its operation at all times without the necessity of providing an outside source of power, thus resulting in lower first cost and in less maintenance and operating difficulties.

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Simplex Filter Gauges can be furnished singly or in any combination to indicate and/or record filter loss of head, rate of flow and sand expansion. The actuating element for the rate of flow and loss of head gauge consists of the self contained shaped mercury float unit, whose movement, due to the application of differential pressures, is transmitted to the indicating or recording units by means of non-corrodible monel metal linkages. The gauge heads can be designed for either floor stand or table mountings as desired and indicate and record on uniformly graduated direct reading dials and charts.

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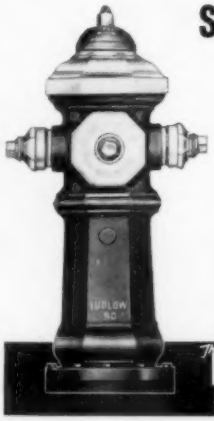

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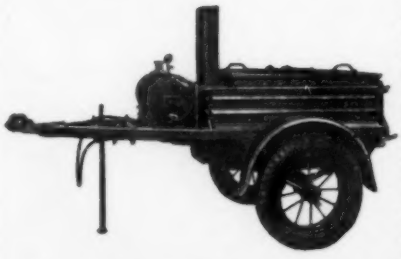

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serious results developing through lack of immediate medical attention.

In the short time that this plan has been in effect the city has so improved its accident record that compensation insurance companies will now voluntarily accept its business, the premium rate has been reduced, and further reductions are expected. The employees have benefited by added vacation and greater freedom from accidents. The only cost to the city will be some additional vacation days with pay, which will be more than offset by the reduction in cost of the insurance.

CHESTER F. LEWIS,
City Manager.

Community Art Center Widely Used

MASON CITY, IOWA.—On January 12, 1941, the Mason City Community Art Center formally opened its doors to the public. It thus became one more link in an ever increasing chain of approximately 87 other community art centers now flourishing in cities and towns throughout the country, attesting the fact that art is wanted and needed, and belongs, in the lives of all the people. To bring it to the people was the task that has been done, by the WPA and civic-minded groups in each of the localities where an art center has sprung up.

In Mason City, the people wanted an art center, they worked for it, and they got it. The Center was installed at a relatively small cost in a space formerly occupied by a battery service company. Unskilled labor was furnished by WPA; the $1,900 required for alterations and equipment was provided by the Mason City Art Center Association. Alterations, and furnishings and equipment made by WPA workers on the site, were designed by William Friedman, architect designer for the Iowa Art Program. Much of the credit for the whole project should also be given to Harry Jones, State Supervisor of the Iowa Art Program. The Center is staffed by a director, 3 instructors (including the director), 3 gallery attendants, 2 carpenters and a secretary.

During the first three months of operation 3,456 persons visited the galleries, and 1,087—including students living as far as fifty miles away—attended workshop activities. Fourteen National Circuit Exhibitions from the WPA Art Program Exhibition Section were shown besides several exhibitions of local art and craft work. Instructors have conducted lectures and demonstrations, and have taught more than 222 different workshops in oil painting, water-color painting, ceramics, sculpture, casting, design, marionette construction, life drawing, and crafts. Every Wednesday evening, art forums are held for the informal discussion of arts and crafts. Extension galleries and workshops are also being planned for nearby Osage, Iowa, which has no art instruction in its public school system. Besides this, the center is used by the local Camera Club, the Art and Handicraft Division of the Women's Club, the Community Theatre Group, and the Movie Maker's Club.

BERNARD FERGUSON,
Director, Mason City Art Center.

Children's Gallery in the Mason City Community Art Center

Class in Painting in the Art Center

National Defense

For material relating to this subject, see pages 5, 42, 52, 81 and 89 in this issue.

New Municipal Athletic Facilities

LYNCHBURG, VA.—Lynchburg recently completed the construction of separate football and baseball facilities. The football stadium, with a seating capacity of 15,000, is of a uniform width of 26 rows for a length of 180 feet on each side of the field. Where the rows begin to curve beyond the straight section, the rear boundaries of the deck converge to a final width of only three rows. The resulting crescent shape places the seats where they are most desired by the spectators. The baseball stand, seating 4,500, is of conventional type with a roof covering roughly half of the bleachers. Seats are of the bracket type with back rests; runners of California redwood. The designing

THERE SHOULD BE NO SUBSTITUTES *in your city planning!*

● The purchase of "just as good" substitutes is generally false economy . . . the "tried and proven" genuine originals and practices can be counted upon to pay dividends in the long run. Of the many materials bought by the City Purchasing Agent or the Water Works Board, supply piping is one of the most important and one of the essentials that should be purchased with the greatest possible care.

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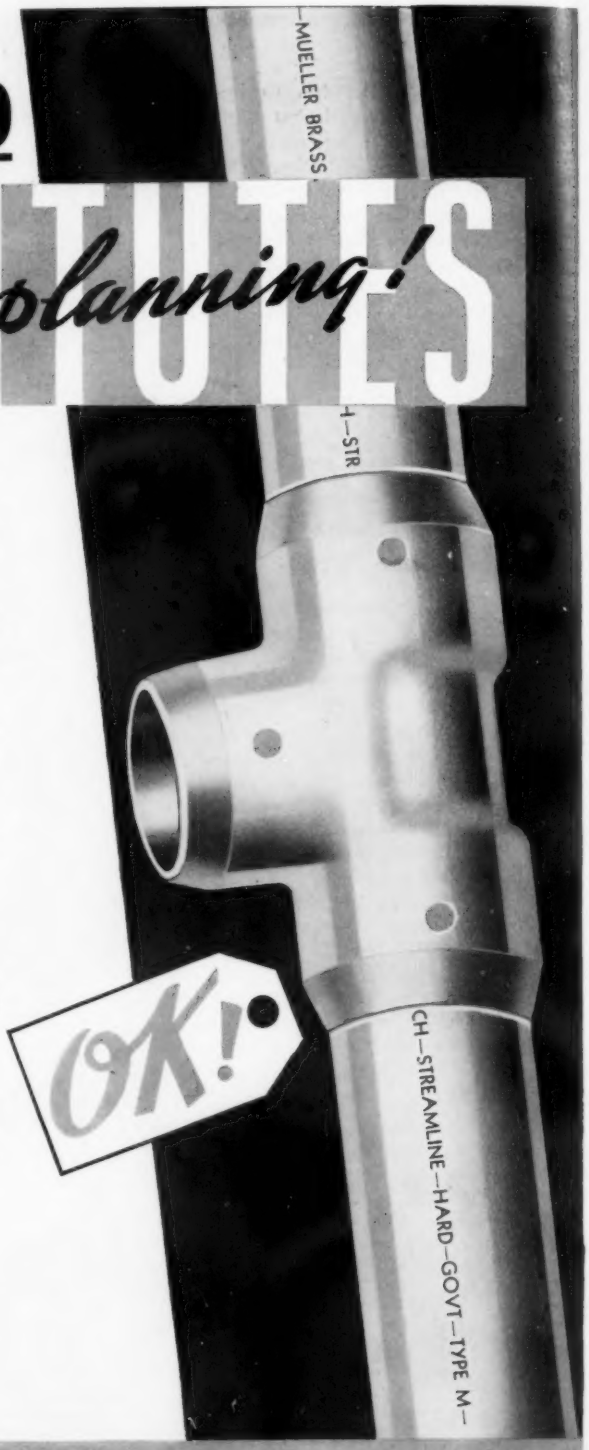

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The New Municipal Athletic Facilities of Lynchburg

engineer for the two projects was Gavin Hadden, of New York.

In addition to the stadium and stand, there have been erected: two field houses with shower and toilet facilities; five public toilet buildings; a press box; a public-address system; and floodlights for the baseball field. The total cost of all facilities was $241,156.60, of which the city's share was $128,660.72, and that of the WPA, $112,495.88.

The football stadium and baseball stand have been constructed with embankments of the cut-and-fill type, and with concrete seat decks built on the sloping earth surface. To date—owing to soil explorations and modern compaction methods—settlement of the fills has been negligible. Samples of soil were secured from a number of test holes over the areas of cut, and were tested by Prof. Donald M. Burmister in the Columbia University Soil Mechanics Laboratory. Fills were built in 3-inch layers, and compacted with two passes by a sheep's-foot roller. The range of moisture was held within 18 to 26 per cent. The structural fill required for both the football stadium and the baseball stand was 32,300 cubic yards, and the cost after compacting and trimming 21 cents per cubic yard.

Concrete seat decks rest on a slag sub-base, and joints were sealed with rubber-expansion joint-filler. In order to assure that no appreciable amount of water will reach the earth slopes, concrete surfaces were sloped slightly up to the expansion joints. Deck drainage flows down the deck to the foremost trench, where it is collected and led away through a pipe drain.

RICHARD F. WAGNER,
Director, Public Works.

The Municipal Bond Market

Recent sales of new issues from the July numbers of *The Bond Buyer*:

Amount	Borrower and Purpose	Rate (%)	Term (Years)	Basis (%)
$ 100,000	Newton, Mass., Street Improvement	1	1-10 Ser.	.84
120,000	Gloucester, Mass., Relief	1	1-10 Ser.	.88
700,000	Hartford, Conn., Public Works and Schools	1	1-15 Ser.	.98
165,000	Phoenix, Ariz., Water-Works Extension	3.75	3 Avg.	1.02
182,000	Albany Port Dist., N. Y., Port	1.25	4.85 Avg.	1.09
110,000	Blommington, Ind., Refunding	1.25	6.25 Avg.	1.12
460,000	Fall River, Mass., Relief	1.25	1-10 Ser.	1.19
1,100,000	Lincoln, Nebr., General Obligation, Auditorium and Street Opening	1.25	4.66-11.5 O.-A.	1.23
461,000	Paterson, N. J., Sewer Improvement, Street Improvement and School of 1941	1.5	6.33 Avg.	1.41
150,000	Fort Dodge, Iowa, Sewer Plant	1.5	7-13.85 O.-A.	1.47
350,000	Mt. Lebanon Tp., Pa., Township	1.5	9.33 Avg.	1.48
150,000	Cook Co., Ill., School	2.25	13.85 Avg.	1.57
280,000	Covington, Ky., Water-Works Refunding	2.25	10.25 Avg.	1.75
700,000	Akron, Ohio, Water-Works Improvement	2.25	13.33 Avg.	2.13
120,000	McGregor, Iowa, Electric Revenue	2.5	6-11 O.-A.	2.18
200,000	East St. Louis, Ill., Park District	2.75	7.85 Avg.	2.75
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Improving Municipal Administration

Current Items from the Public Administration Clearing House

Defense Emergency Adds to Trailer-Camp Regulation Problems

NEW TRAILER POPULATIONS springing up in defense-industry and army-camp areas are emphasizing the trailer regulation problem for local and state governments, a survey by the American Municipal Association shows.

While trailer dwellers have not increased at the rate once predicted, approximately 250,000 houses on wheels are now in use, and there are about 2,000 trailer "settlements" in the country, according to the Association. By the end of the summer the Federal Government probably will own and operate 5,000 additional trailers for emergency housing of defense-industry workers.

The problems of trailer regulation faced by local governments concern health, sanitation, school provision, safety and morals. While some of the municipalities surveyed report satisfactory control of trailers by general ordinances on health and safety, many have enacted ordinances relating specifically to trailer camps. Because many of the trailer settlements lie outside the jurisdiction of municipalities, state regulation also is coming to the fore, the survey shows.

In both cities and states, much of the regulation pertains to health protection, the Association learned upon checking 37 municipal ordinances adopted since 1937, and a number of the new state trailer regulations. While they emphasize the licensing and regulation of trailer-camp accommodations, every one of the 37 local ordinances except those prohibiting trailers within the city limits was found to have specific provisions referring to health matters. Twenty of the recent ordinances control the use and occupancy of trailers.

In a majority of the municipal ordinances, the licensee of a trailer park is recognized as operating a commercial service and is made directly responsible for the condition of its facilities. Some cities, like St. Paul, require a register of persons. The Evanston and Chicago ordinances specify that trailers must carry fire extinguishers.

New State Laws

Among the states, which mainly have extended tourist-camp regulations to include trailer parks, Michigan adopted a law this year covering health and other aspects of trailer communities.

The new Michigan law requires every trailer-camp operator to secure an annual license from the state health commissioner through the city or county board of health. A trailer park must be connected with municipal water and sewer systems or have approved systems installed. All local building, zoning, health and other regulations of the locality not in conflict with the state law also apply. The trailer camp operator is bonded for $1,000, pays a $25 annual license fee for every 10 acres of camp, and a $1.50 monthly fee on every trailer accommodated. Trailers from other states are fee-exempt the first 90 days they are parked, unless the occupant is employed in Michigan. Half of the $1.50 fee goes to the district schools, 50 cents to the county, and 25 cents to the municipality.

The Kansas State Board of Health recently adopted "emergency regulations" pertaining to sanitation in the vicinity of troop concentrations and war-industry areas which apply to trailer parks as well as hotels and other lodgings. Under the regulations the local health department in the emergency zone is responsible for enforcing regulations on refuse disposal, rodent control, restaurant sanitation, water supply, etc. The county health department issues the permit either for parking a trailer outside the camp's designated area or for operating a commercial parking area.

Missouri is applying State Board of Health rules on tourist and other camps to cover the emergency situation. Indiana employs State Board of Health and sanitary engineers to inspect boomtown trailer camps. Other states with state-wide trailer regulations are Virginia, Ohio, California, Florida and Illinois.

A Model Trailer Ordinance

In connection with use of trailers as emergency housing, the Federal Government is offering suggestions for regulation. The current edition of the sanitation code drawn up by the U. S. Public Health Service contains a section on trailer camps, and the Division of Defense Housing Coordination has suggested standards for portable dwellings. More recently municipal officials and other authorities with trailer-regulation experience have collaborated on a model trailer ordinance designed especially for defense-activity centers. The model ordinance is being distributed by the Consumers' Division, Office of Price Administration and Civilian Supply.

Gary Tries New Control for All-Night Parking

A NEW METHOD of controlling overnight parking on city streets so that street sweeping can be done without interference is on trial in Gary, Ind. The plan, reported by the American Public Works Association, is to sweep alternate sides of the paved streets on alternate nights, and to let residents without garage accommodations park on the side of the street that is not to be swept that night.

Under a temporary traffic regulation, this is the sweeping-parking formula worked out: On odd nights of the month, beginning at midnight, sweepers clean the sides of the streets on which the house numbers are odd; on even nights they sweep the sides on which the house numbers are even.

The plan was put on trial when an ordinance entirely forbidding all-night parking failed to keep the streets free unless it was constantly enforced by arrests.

New Minnesota Law Prohibits "Sound" Advertising in Sky

WHEN OFFICIALS OF ALBERT LEA, MINN., found a local ordinance ineffective in prohibiting "sound" advertising by airplane, they sought aid of the State Legislature. In consequence, it is now a misdemeanor by state statute to engage in advertising through loudspeakers attached to cruising planes. The statute, based on evidence from the local officials that plane advertising by sound created a noise nuisance and a traffic hazard, was approved by the 1941 Legislature, according to the American Municipal Association.

Miami Controls Termite Controllers by Ordinance

The city government of Miami, Fla., has passed an ordinance to protect homeowners against illegal termite controllers who profess to control termites that are not termites but flying ants. The ordinance came about in this way, according to a report

MATHIESON CHLORINE'S 15-YEAR RECORD at BUCYRUS, OHIO...

"...high quality chlorine ...no sticky valves at any time... cylinders always in good condition..."

J. R. Lower, Supervising Chemist, City of Bucyrus Water Works, Bucyrus, Ohio

HTH comes in 5-lb. cans with replaceable caps, packed 9 cans to the case; also in 100-lb. drums.

●Here is a 15-year record to be proud of in any league, and it is submitted by J. R. Lower, Supervising Chemist, City of Bucyrus Water Works—the man who knows! Says Mr. Lower, "We have used Mathieson Chlorine for over 15 years. During that period we have received excellent service. The chlorine is of high quality and free from dirt. The cylinders are in good condition, and at no time have we found any sticky valves..."

Bucyrus, Ohio is one of many cities and towns where Mathieson Chlorine plays a vital part in contributing to the efficient operation of municipal water works. And we are particularly proud of the reference to cylinders and valves—for trouble-free cylinders and valves have always been an integral part of Mathieson Chlorine service.

In Mathieson Chlorine you are assured of a pure product and prompt delivery service in addition to well-kept cylinders and valves. Many water works also keep Mathieson Sanitation HTH on hand for quick efficient service when water mains break or other emergencies arise. It is a free-flowing, mobile chlorine carrier containing over 70% available chlorine. We will be glad to send you full information on these two Mathieson sanitation products —Chlorine and HTH.

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When you write for that catalog, kindly mention THE AMERICAN CITY.

from the American Municipal Association:

Fifteen species of termites are found in Florida, but flying ants, also found in large numbers, are similar to termites in appearance. Because of this, exterminators often take advantage of homeowners by pointing out the presence of the flying ants and agreeing, for a fee, to kill them off.

Now, however, the chief Building Inspector of Miami requires "structural insect controllers" to secure licenses at his office and to qualify for the license by answering a quiz showing their knowledge of the termites.

Massachusetts Wants More Public Beaches and Town Forests

Excerpts from a "Park, Parkway and Recreational-Area Study," prepared by the Massachusetts State Planning Board in cooperation with the National Park Service:

WATER constitutes a major recreational resource. One of Massachusetts' most valuable assets is the thousand miles or more of salt-water frontage interspersed with excellent stretches of fine sandy ocean beaches and more than one hundred small harbors that have been well developed. Public ownership of the beaches, however, amounts to only about 59 miles, in contrast with 143 miles of private and undesignated beaches, which make only a small percentage of the total beach frontage available to the state's population of over four million people.

In fact, unrestricted use of beaches has been the privilege of the few, with the masses crowding wherever enterprising men have provided opportunities. Harold L. Ickes, Secretary of the Interior, speaking for the nation at large, very well described the situation in Massachusetts, when he said: "When we look up and down the ocean fronts of America, we find that everywhere they are passing behind the fences of private ownership. The people can no longer get to the ocean."

Six ocean beaches which the report mentions specifically as desirable for state acquisition are Horseneck Beach in Westport, Duxbury Beach in Marshfield, Wingaersheek Beach in Gloucester, Poponnesset Beach in Mashpee, Harding's Beach in Chatham, and Scussett Beach in Sandwich.

Massachusetts Leads in the Town Forest Movement

The report stresses in particular the steps which can be taken without large public expense. Further development of town forests offers such opportunity, for experience has shown that when these are properly handled, they afford a source of income aside from their profit in a recreational way.

Already there are 121 city and town forests in Massachusetts, the survey shows, containing approximately 35,000 acres, in addition to 171,000 acres in state-owned forests. It points out, however, that the Commonwealth has over three million acres of woodland, a major part of which is still undeveloped and, in large degree, wasted. In urging scientific cultivation of wider forest areas, the State Planning Board's findings corroborate the advice given by Governor Saltonstall nearly two years ago when he said:

"Massachusetts has long been a leader in this town forest movement. I should like to see our leadership maintained so that every acre of idle land available for forests is set to work producing logs for our mills, providing shelter for our wildlife, and offering convenient recreation areas for thousands of our men, women and children."

Public Picnic Sites and Camping Grounds

Further development of public picnic sites and camping grounds is another recommendation involving little cost but which will greatly add to the enjoyment of tourists and residents alike. The report includes a map showing, among other things, several hundred of the more important picnic spots now available, with notes as to the regulations applying to each. More places of this sort can be provided, both by municipalities and the state, at small initial cost but with a substantial return in health and an actual profit through increased tourist travel.

FOOTNOTES TO THE ACCOMPANYING TABLE

(These figures were compiled from yearly reports sent in by the Town Forest Committees and are subject to further additions from various sources.)

l—how acquired
g—gift
p—purchase
t—town land
x—tax land
f—town farm
w—watershed
i—Indian

Town	Acres[1]	Trees Planted
Acton	22 p	
Adams	150 w	10,000
Amesbury	32 p	
Ashburnham	25 g	
Athol	111 f w	110,500
Ayer	100 f	28,500
Barnstable	210 t	214,500
Barre	40 f	2,000
Bedford	50 w	
Bernardston	100 f	5,500
Billerica	506 g w	5,000
Blandford	70 w	25,500
Boxford	52 t	
Brookline	100 w	90,000
Canton	25 p	10,000
Carlisle	72 f	25,000
Chester	950 w	83,000
Concord	70 g	17,500
Conway	160 f	45,500
Dalton	100 g	40,000
Dartmouth	104 p	58,000
Dedham	70 p	8,900
Deerfield	110 g p	12,500
Dennis	40 t	10,500
Dighton	100 p t	29,500
Dunstable	160 p g	35,000
Duxbury	33 f t	
Easthampton	35 p	22,500
Easton	50 g	10,000
Falmouth	490 p g w	248,000
Fitchburg	2,067 p w	529,000
Gardner	50 w	105,000
Goshen	100 g	5,000
Granville	100 p	14,000
Gr. Barrington	275 w	8,000
Greenfield	528 w t	65,000
Groton	280 f g	57,000
Groveland	32 f	30,000
Hanover	8 f	7,000
Harvard	70 f	8,000
Hingham	120 p g	94,500
Holden	126 g	
Holliston	175 t	3,000
Hopkinton	125 g	10,250
Hudson	187 g p f	152,000
Lancaster	23 g	10,000
Lanesborough	422 p	5,000
Lee	66 g	
Leominster	883 w	165,000
Lexington	10 t	
Ludlow	112 p	112,000
Lunenburg	120 p	3,000
Mansfield	200 w f	81,500
Marlborough	40 p f	41,400
Merrimac	325 w p	103,000
Methuen	74 f	43,500
Middleborough	24 t	2,000
Millville	250 x	130,000
Monson	230 p w	53,500
Natick	110 f g	30,000
New Salem	108 f p	18,000
North Adams	720 w	404,000
No. Andover	112 f	49,000
No. Attleboro	165 x	55,000
Northborough	19 t	4,700
No. Brookfield	124 w	160,000
Norton	125 p f g w	78,000
Norwell	29 f x g	10,100
Oxford	100 f	42,500
Peabody	140 w	12,500
Pembroke	117 f	22,000
Pepperell	100 p f	21,000
Petersham	175 p f	23,300
Pittsfield	145 g	10,000
Plainville	117 x	40,000
Plymouth	230 w p	160,000
Reading	150 p	119,500
Rockport	365 w t	34,000
Russell	3,000 w	245,775
Sandwich	16 f	15,400
Scituate	44 p	20,000
Sharon	101 t	
Sherborn	25 g	
South Hadley	50 t g	21,500
Spencer	65 t	13,000
Sterling	136 p	19,000
Stoughton	109 t	30,000
Townsend	50 f	11,000
Upton	30 f	7,500
Uxbridge	117 p	10,000
Wakefield	58 w	10,000
Walpole	275 g	111,800
Ware	102 g	99,000
Warwick	98 p	30,000
Webster	6 t	6,000
Wellfleet	26 i	325
Westborough	20 g	28,500
W. Bridgewater	10 p	4,500
Westfield	5,701 w p	777,000
Westford	11 g	2,000
Westminster	100 g	2,500
West Newbury	25 f	23,000
Westport	40 g	
Weymouth	329 w p	16,500
Williamstown	150 g	
Winchendon	430 w	150,250
Woburn	193 w t	80,000

FASTER TRAFFIC...FEWER DEATHS

ON PHILADELPHIA'S BROAD STREET

Robt. A. Mitchell, Traffic Engineer and John F. Gallagher, Traffic Signal Engineer of Philadelphia, responsible for the new system, inspect operation of G-E NOVALUX *Controllers.*

G-E NOVALUX *Traffic Signals*

Via GRAYBAR ELECTRIC COMPANY

Spectacular gains in traffic flow and accident reduction are made possible by careful planning to take full advantage of the unusual flexibility of G-E NOVALUX Controllers. Individual timing schedules for each signal may be coordinated for maximum effectiveness of the entire system, and provision for remote cycle change permits varying the schedule to meet traffic peaks.

When you go to GRAYBAR for traffic signalling equipment and assistance, you get the double-advantage of G-E engineering and GRAYBAR *specialized* distribution service. All the supplies you need for installation and maintenance are obtained from a single source, intimately familiar with local needs and traffic problems. Whether your traffic problem be simple or complex, "G-E NOVALUX via GRAYBAR" holds the answer. Write for literature or planning aid.

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SPEED

Up From 18 to 27 m.p.h.

ACCIDENTS

Down by 50%

Few traffic situations have posed as complex a problem as Philadelphia's Broad Street. At several intersections with over 35,000 vehicles for 12 hours, cross traffic *per lane* exceeds that on the main thoroughfare while on others it is only 20% of the Broad Street traffic.

The "flexible progressive" signal system finally engineered to meet this combination of conditions has been found to permit practically continuous operation of vehicles along the thoroughfare at the planned rate of speed. At the same time—pedestrians move across safely, and there is less "backing up" of cross-traffic.

Most important of all, over-all speed on Broad Street has been increased from 18 to 27 m.p.h., with a 50% reduction in accidents. During 1940, only 6 pedestrians were killed in comparison with 23 in 1931 before installation of traffic signals.

During August we hope you will remember to mention THE AMERICAN CITY.

Traffic Control and Facilitation

Conducted by Publications Committee, Institute of Traffic Engineers, 60 John St., New York

Charles G. Beckenbach, Chairman; Merwyn A. Kraft, Vice-Chairman; David M. Baldwin, Martin Bruening, Stephen Butterfield, Edgar F. Copell, John B. Ecker, Fred W. Fisch, Theodore W. Forbes, Milton Harris, E. Emmett Kirwin, Foster M. Kunz, Walter Matthews, Henry W. Osborne, I. S. Shattuck, Matthew Stelski, Frederick Tarbox

The Popular Trolley Coach

By E. E. KEARNS

Transportation Department,
General Electric Company

DURING ten years and a depression, the modern trolley coach has become a factor in the scheme of modern urban transit and traffic. In nine years to 1937, the total of trolley coaches in service reached 1,000; in the next two years another 1,000 appeared; and the third 1,000 during the next 1½ years; with the fourth 1,000 now on their way.

The objective of any transit system is to handle the most people comfortably and expeditiously and to maintain costs within revenues. Significant characteristics, therefore, of the trolley coach are:

1. Marked ability to attract new patrons
2. Ability to operate at very low over-all cost, in its proper field of service density

Trolley coach features which appeal to the riding public include:

Absence of gasoline fumes

Extreme quietness of operation

Smooth uninterrupted power for acceleration and smooth blending electric and air braking

Excellence of lighting from an ample power source

Abundance of thermostatically controlled electric heat combined with well-distributed ventilation

Wide aisles

In practically every instance where the public has been given an opportunity to indicate its preference, trolley coaches have emerged as the choice by handsome margins.

In Portland, Ore., for example, in 1936 following an opportunity to sample both modern self-propelled buses and trolley coaches, some 70,000 voters approved the transit modernization plan to provide 140 new trolley coaches. After 3½ years of operation, a recent survey by the *Portland Oregonian* showed that, of the total population served, 80 per cent voted for the trolley coaches; 9 per cent for their semi-modern street cars; 8 per cent showed no preference; 2 per cent voted for motor coaches; 1 per cent voted for no additional change.

In Milwaukee, Wis., the public demand for the trolley coach is vividly demonstrated. An initial installation of 30 coaches was made in 1936. Since that time, and based upon specific request from both the public and city officials, a substantial increase has been made each year in the trolley-coach fleet, 100 coaches during the last year.

Shreveport Railways, completely modernized with trolley coaches, boosted patronage from 9½ million passengers in 1929 to 14½ million passengers in 1940.

On the Hough Avenue Line in Cleveland, which was modernized with

By the Beach at Waikiki; One of 60 *44-Passenger Brill Trolley Coaches Installed by Honolulu Rapid Transit, Ltd., July,* 1941

ON THE *FIRST LINE OF DEFENSE*

Center, Officer S. N. Stevenson, Seattle Police Dept. Other photos by U. S. Army Signal Corps.

Harley-Davidson Motorcycles are not only establishing outstanding records of performance in motorized units of the U. S. Army — but are enabling police departments throughout the country to better meet the vital need for protection of rapidly growing defense industries. And all this time Harley-Davidson Motorcycles are continuing to serve the police of America on the first line of defense against loss of lives in traffic accidents.

HARLEY-DAVIDSON MOTOR COMPANY, *Milwaukee, Wisconsin*

★ HARLEY-DAVIDSON THE POLICE MOTORCYCLE ★

trolley coaches in 1936, it was estimated that the initial fleet of 20 coaches had ample margin of carrying capacity to handle the service. The heavy increase in riding which developed, however, gave early evidence that additional coaches would be required to handle the increase in patronage. In the interim of manufacture of these additional coaches, brand-new buses were placed in service to help handle the peaks. It was first arranged to operate these buses interleaved with the trolley coaches and, lo and behold, the passengers would wait for the trolley coach. To even out loads, it was necessary to operate the trolley coaches and buses in consecutive fleets rather than mix the two types of vehicles.

In one eastern city, where practically complete modernization has been made with the trolley coach, schedule speeds have been increased 25 per cent, patronage 25 per cent.

In a southern city, which has conducted a major trolley coach modernization program, riders have been increased 52 per cent from the heyday of 1929 prior to the modernization.

The results obtained on some of western properties,—believe it or not,—with trolley coach modernization, have been so satisfactory that banking institutions in these areas are actually now seeking the paper back of these new modernizations. This is practical proof of the public's appreciation of modern vehicles.

From Municipal Lots to Complete Parking Program

By DAMON STETSON
Montclair, N. J.

MUNICIPAL officials in the great majority of cities face problems of traffic congestion and inadequate parking facilities in their central business districts.

The individual today is fluid and independent. He can go where he wants to and when he wants to. More and more he is refusing to undergo the inconvenience and time-consuming effort of wedging into packed shopping areas. The shopper goes where he can park quickly and without scratching a fender. *And many people will ride a mile to avoid walking a block.*

Montclair, N. J., a town of 40,000 people in suburban Essex, has numerous neighborhood shopping centers besides two large business districts. In practically all of these, and particularly in the bigger business areas, there was insufficient parking space. Moreover, the shopping centers, closely bordering residential areas, created special problems relating to blight and obsolescence of abutting residence property through unsightliness and reduced values.

Both the Town Planning Board and the Town Commission gave special study to these problems during the summer and fall of 1940. Concrete action has already been taken. The Commission has launched a program for the establishment of free municipal parking lots near the central business sections. And Arthur B. Holmes, architect and member of the Town Planning Board, has drawn plans for a solution of the problem for several of the neighborhood shopping centers.

Rear Lots for Long-Term Parkers

The new parking lots are located behind stores in business sections. The theory is that all-day parkers, primarily, will use these lots. This will remove the long-term parkers from nearby side-streets and residential areas where parked cars have created traffic hazards as well as impediments to

One of Montclair's Mark-Times Receiving Tribute

movement of fire apparatus. Of course, depreciation of residential properties has been a consequence of streets crowded with stationary vehicles throughout the day.

Several years ago Montclair installed parking meters along its main streets. This move drove the all-day parker away from the main thoroughfares, so the shopper could park near stores. But the resulting difficulties in residential streets proved that this step was not the entire solution here. The supplementary free municipal parking lots financed from parking-meter revenues, should complete the solution.

Moreover, the program for the establishment of the parking plazas will be financed principally by revenue from parking meters, according to Revenue and Finance Director Bayard H. Faulkner. Annual receipts from the meters are about $12,000, so that the many nickels will provide the yearly carrying costs of purchase of the land and improvements to make it suitable for parking.

The town made the first move in this enterprise, but for the most part merchants are backing up officials. Ultimate solution of many of the parking problems can come only through a combination of private initiative and public action.

Buffer Strips to Separate Commercial and Residence Zones

Holmes' model shows suggested treatment for intersections of business and residential streets at neighborhood shopping centers. The town has been much bothered of late by requests for zoning changes in properties adjoining business blocks. If an exception is granted, a process of mushroom growth begins that is detrimental to the entire area.

Introduction of a municipally owned strip, approximately 50 feet wide, between the commercial and residence zones, would serve as a buffer. If shrubbed, it would act as a screen between stores and homes, and forestall the mushroom growth of the business section.

The scheme provides for development of communication and parking areas behind the stores for employees' cars and delivery trucks. Of course, the loading would be done entirely from the rear, rather than from the front of stores as is so often the case now.

By increasing the width of the secondary street for the full length of the allowable store frontage from the existing 50 or 60 feet to 90 feet, more space is provided for parking without blocking this street. After a heavy snowfall, the plows can push much of the snow from the business streets into the wide parking area on the intersecting streets. This expedites traffic and permits more leisurely removal of the snow with trucks and workers

Cleveland buys again!

PLACES 2ND REORDER FOR
DUAL AUTOMATIC METERS!

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Initial Order	2,300	*Dual Meters*
1st Reorder	800	*Dual Meters*
2nd Reorder	800	*Dual Meters*
TOTAL	3,900	*Dual Meters*

NOT only Cleveland but cities all over the nation are coming back for more DUAL AUTOMATIC METERS as they find that here is the answer to their traffic control problem. Out of 132 cities, which gave DUAL AUTOMATIC METERS their initial award, 90 reorders for DUAL METERS have already been received. An aggregate of 222 installation orders totalling more than 55,000 meters.

What DUAL AUTOMATIC PARKING METERS have done for other cities, they can do for your city if you have a traffic problem.

The Original CARL MAGEE METER . . . Licensed under Vehicular Parking Ltd.

DUAL PARKING METER CO.

Commerce Exchange Building — Oklahoma City, Oklahoma

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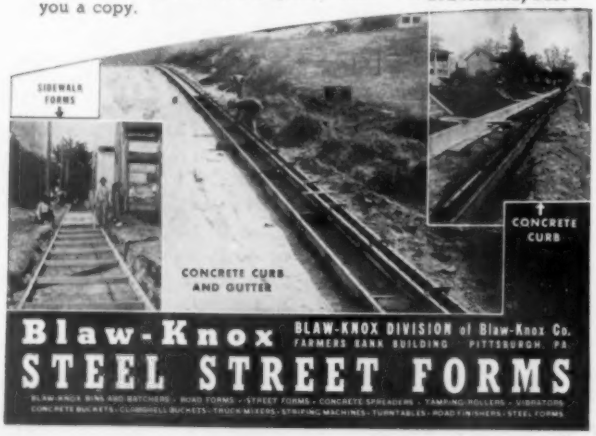
- **Any shape of Curb Face**
- **Sidewalks, etc.**



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out of the way of regular traffic lanes. Also, the introduction of sidewalk extensions into the secondary street at the intersection to the depth of the diagonal parking provides a shorter street crossing for pedestrians and greater safety for parked cars.

It will take years to put Holmes' plan into effect, yet aiming at a conscious and reasoned objective may well make the Montclair of the future a far more desirable town in which to live and shop. Meanwhile establishment of the municipal parking lots means less compromise of the auto's service by forcing it to conform to the inadequacies of the town. Officials believe the program for the parking plazas will mean more business for merchants as well as the preservation of nearby residential values.

Practical Data on Traffic, Parking and Transit

Excerpts from Chapter 6 of an outstanding new volume on "Local Planning Administration," published by The Institute for Training in Municipal Administration, Chicago. *(See page 109 of this issue.)* *The entire chapter (of 59 pages) and Chapter 7 (of 68 pages) on Transportation merit careful study by all concerned with municipal traffic and transportation problems.*

IT IS obvious that traffic conditions are continually changing. They are different during different hours of the day and during different days of the week, they vary in different seasons of the year and they change from year to year as the city develops and as the volume of traffic increases. New factors are being continually introduced, such as new types of vehicles, street and highway improvements, new traffic routes, and different methods of traffic control. It is desirable, therefore, that traffic studies be conducted continuously or at frequent intervals, which of course suggests the need of a permanent traffic engineering agency. . . .

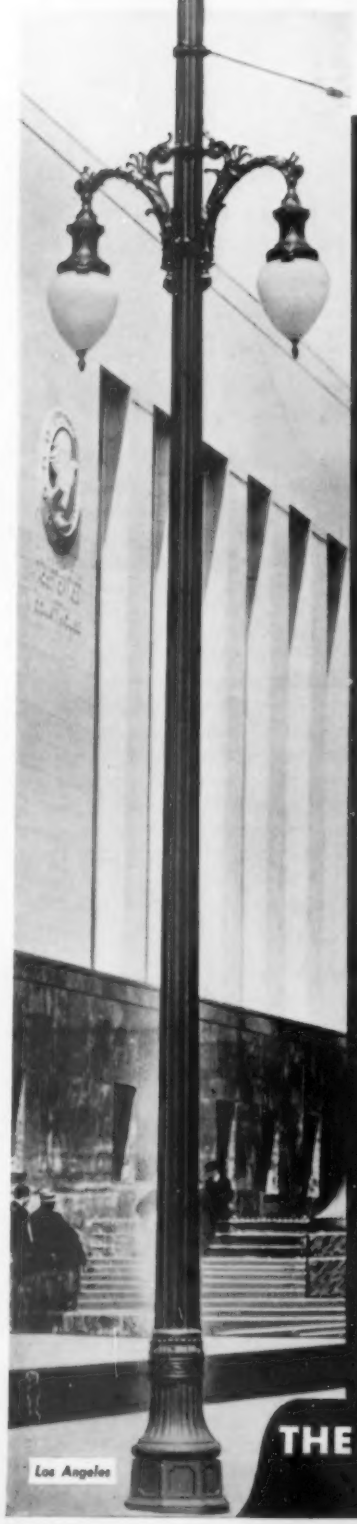
A broad general traffic survey will be much more useful to both the city planner and the traffic engineer than exhaustive studies of isolated local traffic situations or only certain aspects of the traffic problem. The following outline indicates briefly the scope of a comprehensive general traffic survey:

1. **Legal Phases**
   - (a) Statutes
   - (b) State traffic code
   - (c) Local ordinances
     - (1) City
     - (2) Coordination with regulations in neighboring local political units.
2. **Traffic Regulatory Methods and Devices**
   - a. Maps showing
     - (1) arterials
     - (2) one-way streets
     - (3) boulevards
     - (4) truck routes
     - (5) transit lines
     - (6) et cetera
   - b. Signals, signs, safety zones, etc.
     - (1) maps showing types, locations, etc.
   - c. Traffic enforcement methods and activities
   - d. Speed, signal, and sign observance by vehicles and by pedestrians
3. **Traffic Flow**
   - a. Pedestrian counts in congested districts
   - b. Vehicular counts
     - (1) passenger cars
     - (2) trucks, truck trailers
     - (3) motor-buses
     - (4) trolley-buses
     - (5) street cars
     - (6) turning movements by each type of vehicle at each important intersection
   - c. Traffic flow data, charts, and maps
   - d. Hourly, daily, and seasonal variations
   - e. Examination of data from previous surveys and analysis of change
4. **Safety Studies**
   - a. Devices to promote safety
   - b. Accident areas
     - (1) accident spot maps
     - (2) railroad crossings
     - (3) heavy pedestrian crossings
     - (4) school crossings
     - (5) "worst intersection" studies—condition and collision diagrams
   - c. Types of traffic accidents
   - d. Analysis of accident causes
5. **Capacity Studies in Congested Areas**
   - a. Volume carried in each lane
   - b. Causes and extent of delays
     - (1) due to interference by cross traffic
       - (a) vehicles on cross streets
       - (b) pedestrians crossing against traffic
       - (c) pedestrians crossing with traffic
     - (2) due to marginal interference
       - (a) parking
       - (b) loading and unloading at curb
       - (c) vehicles entering parking lots, etc.
     - (3) due to internal interferences
       - (a) weaving from lane to lane
       - (b) lanes too narrow
       - (c) slow-moving vehicles
       - (d) rough pavement, steep grades, etc.
       - (e) obstructions such as loading platforms, safety islands, elevated railway pillars
       - (f) cars moving in opposite directions
     - (4) due to regulatory system
   - c. Effects of one-way streets
   - d. Effects of street system features
     - (1) bridges, tunnels, viaducts, etc.
     - (2) dead end street
     - (3) roadway and sidewalk widths
     - (4) curb radii
     - (5) variation in block lengths
     - (6) irregular intersections
6. **Parking Survey—street and off-street parking facilities and their use**
7. **Transit Studies**
8. **Characteristics of Vehicles of Different Types**
   - a. Speeds
     - (1) average, minimum, maximum
     - (2) acceleration and deceleration
   - b. Sizes of vehicles and loads
   - c. Load characteristics
   - d. Methods of operation
9. **Source and Destination Surveys**
   - a. Through traffic in congested areas
   - b. Foreign traffic
   - c. Homes to places of employment
   - d. Factory trucking
   - e. Residence of owners of parked cars in congested area—traced from license numbers

The Parking Problem

Few problems in our cities are of more general and absorbing interest today than the parking problem. Even so, very few citizens or officials fully appreciate its implications. The more one studies the many ramifications of this problem, the more one is convinced of the existence of a vicious circle in the economy of concentrating commercial activities in central areas, for which no entirely effective practical solution has as yet been offered. Street capacities are increased so more people can reach the central business district more easily and more quickly in their private cars but when they arrive they find it difficult to dispose of their cars without cruising around in search of places to park at the curb—unless they are willing to pay for parking on parking lots or in parking garages. In most large cities curb parking spaces will not hold more than a fraction of the cars that desire to park. Off-street parking facilities are provided; more and more cars come, thus encouraging more intensive use of land, and consequently fewer lots are available for parking. The physical and economic limits of the intensity of developments, of building bulk, in central areas lie in the restriction of accessibility. In order to support an intensity of development which is already staggering from strangulation, we force the breath of life into it by increasing the accessibility of the district; but this is no sooner done than building bulks are again increased, traffic congestion increases, terminal facilities are reduced, and all concerned are as bad off as before. Obviously, some broad, comprehensive, intelligent plan is needed to cope with such a problem.

What Do You Look For in a STREET LIGHTING STANDARD..



STRENGTH? Strength to properly support the luminaire—strength to absorb traffic impacts. You get both in Union Metal standards because the shafts are fabricated from the best grade open hearth steel, constructed with only one electrically welded vertical seam and cold rolled by a special process which increases materially both the tensile strength and elastic limit of the steel.

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ATTRACTIVE APPEARANCE? Union Metal knows how to build beauty into lighting standards as well as those features that make for long, useful service. Shafts are available in plain round, fluted or octagon cross sections, and can be combined with any one of a number of base and bracket arm designs, enabling you to select attractive mountings that will harmonize with the surroundings.

COMBINATION OF SERVICES? Union Metal also furnishes standards capable of carrying all overhead services, including luminaires, light circuits, trolley span wires, telephone lines, etc. This cleans up unsightly curb lines as all other service poles can be removed. Here's your best bet for economy and appearance.

Whether it's standards for business district, residential, intersection or highway lighting, you'll find what you're looking for in one of Union Metal's 4000 different designs. Write for Catalog No. 71 today.

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CANTON, OHIO

Outdoor Lighting

Streets—Highways—Floodlighting

Survey Finds Low Cost Usually Means Poor Lighting

By Otto P. Ortlieb
Engineer of Street Lighting, Trenton, N. J.

AVERAGE 1940 street-lighting costs in 183 cities of 50,000 population or more are given regionally in the following table:

	Cost per Capita	Cost per Mile of Street
New England	$1.22	$747
Middle Atlantic, exc. N.Y.C.	1.12	820
New York City	.80	1,395
East North Central	.98	663
West North Central	.97	423
South Atlantic	1.02	535
East South Central	.61	259
West South Central	.48	204
Mountain	.92	285
Pacific	1.26	574
Average United States	$ .98	$626

The cost per capita has been very generally used in comparing street-lighting expenditures; but the expenditure per mile of street is also important in such comparisons, particularly where the population density is much below or above average.

Differences in cost are due to variations in street-lighting rates and to differences in the quantity of lighting provided. In general, a low per-capita or per-mile cost may be the result of either low street-lighting rates or insufficient lighting or both. The information secured in this survey indicates that the amount of street lighting provided is usually a more important factor in this respect than the rates paid. It may be noted in this connection that the Federal Power Commission data on average charges for electricity for residence service in cities above 50,000 in the nine geographical areas show a spread of approximately 50 per cent between the lowest and highest. The average street-lighting rates in the various regions appear to vary to about the same extent. Rates in individual cities of course show a greater spread.

Data from 145 cities included the size of the lamps in service and this was used to compute the total lumen output of the street lamps. Average data on the service provided are as follows:

	Generated Lumens per Capita	Generated Lumens per Mile of Street	Lamps per Mile of Street
New England	116	76,600	20
Middle Atlantic, exc. N.Y.C.	96	74,100	21
New York City	81	140,500	35
East North Central	148	85,800	22
West North Central	116	44,200	19
South Atlantic	96	51,400	20
East South Central	88	36,800	10
West South Central	55	23,100	8
Mountain	110	33,700	8
Pacific	189	85,600	22
Average United States	114	73,100	20

The data in the foregoing tables indicate that very low costs are generally associated with a relatively low degree of service.

The Illuminating Engineering Society Recommended Practice of Street Lighting recommends illumination intensities to be provided on various types of streets. It includes illustrative arrangements of lighting units, stating the lamp size and spacing recommended on streets of different traffic density. Combining these recommendations for all classes of streets in a city of medium population density indicates that an average of at least 120,000 generated lumens per mile of street is necessary for adequate visibility. This is based on effective utilization of the light by means of correct re-directive luminaires and the use of lamps of the correct size properly spaced and mounted. Cities having a high density of population, which results in more traffic on the streets, will require more light per mile of street. In addition, if the light is not efficiently utilized, the generated lumens per mile must be much greater.

The questionnaire sent out was very short and did not go into detail regarding the street-lighting costs. Since there are many different methods used by such a large number of cities to pay for street lighting, a report of this nature cannot be considered altogether uniform. In some cities the installation cost of a new system may be paid in one year and costs in the following years will not show this improvement. In some cases the cost of the street lighting, or some part of it, is assessed directly against the property owners along certain streets, and this cost might not be included in the city report. Where cities have municipal systems, it is sometimes difficult to allocate all the depreciation and interest charges, and this might cause variations.

The miles of streets reported are approximations in some cases and in numerous cities the streets are not all lighted. The street length is an important factor in appraising street lighting and it is desirable to develop a more uniform method of reporting this information.

Owing to the difficulty in determining the lumen output of some of the lamps, principally arc lamps and gas lamps, approximations have been made in some cases in listing the total lumen output. The total lumens of all lamps were included in this compilation, although in numerous cities some of the lamps burn only part of the night.

Large Income from City Electric Plant

"The Main Public Utility—the one hardest to obtain if you don't own it—is the light and power plant, for that is where the money is," said Mayor H. H. Benoit of Monroe, La., to the Conference of Louisiana Mayors. The net earnings of the Monroe municipal electric system are twice the amount brought in by taxes and licenses. The various city departments are charged for the electricity they use, the non-utility departments paying as follows: Police, $1,314; Fire, $487; Sanitation, $1,457; Street Lighting, $20,070. Monroe also owns its water and bus systems.

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FOR SAFETY
FOR ECONOMY
FOR APPEARANCE

L-M LIGHTING

There are many sound reasons why progressive American communities are modernizing their street lighting systems. Business men demand a new White Way for the ***prestige*** (and for the shopping crowds) good lighting brings to a business street. Thinking citizens organize to obtain the improved visibility that assures greater ***safety*** for driver and pedestrian. Civic leaders want the distinctive ***appearance*** that makes streets more pleasing to the eye.

It is significant that the percentage of these progressive communities choosing L-M Street Lighting Equipment grows larger each year. More and more, both the municipal executive and the utility engineer are finding that the complete L-M line of "Everything You Need For Every Type Of Outdoor Lighting", meets every community's requirements, and fits every community's budget.

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LINE MATERIAL COMPANY

Street Lighting in Madison, Wis.

THE accompanying photograph of Madison street lighting illustrates one of the earliest projects installed after the adoption of the I. E. S. Code in 1929.

This system on State Street consists of 77 ornamental steel posts 27 feet high carrying two 15,000-lumen pendant lamps in dustproof, bug-proof General Electric Form 32 B luminaires. The system is supplied by six 20-ampere series circuits. Twenty of the units burn all night, and 57 to midnight.

The old system replaced at that time consisted of 33 10,000-lumen lamps and 30 6,000-lumen lamps mounted on 13-foot ornamental posts. The visibility provided by the new system was three times that. Other improvements in Madison street lighting were made in 1937 and 1938 when 1,076 old style overhead suspension-type series fixtures were replaced with the new Form 79 luminaires. This improvement resulted in an increase of 40 per cent in the illumination of Madison streets, views of which are shown above.

Costs at Troy, Ohio

THE MUNICIPAL ELECTRIC PLANT OF TROY furnishes street lighting free, to the estimated value of $9,000. The 46.4 miles of line comprise 11.5 miles of underground and 34.9 miles of overhead. There are 406 overhead luminaires and 314 ornamental units. Installation cost of ornamental units is assessed against properties on a front-foot basis.

JOHN L. PORTER,
Director of Public Service, Troy, Ohio.

Street-Light Billing for 1942 in Kokomo, Ind.

(Population 33,795)

Number	Lumens		Rate	Total
OVERHEAD UNITS				
92	1,000		Scale	$1,753
140	2,000		Scale	3,816
382	6,000		Scale	16,244
ORNAMENTAL UNITS		(City-owned)		
93	1,000		$15	1,395
7	4,000		36	252
		(Company-owned)		
12	6,000		72	864
68	10,000		93	6,324
		(Jointly owned)		
12	1,000		24	288
25	2,500		36	900
107	4,000		45	4,815
12	6,000		54	648
				$37,299

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★ Economically
★ Effectively with
★ HOLOPHANE
★ REFRACTORS

FROM COAST TO COAST Holophane Refractors SAVE as they SERVE to insure traffic safety. . . . With the rising tempo of industry increasing night traffic across the country, more and more civic authorities are installing Holophane Refractors. . . . These sentinels of safety provide maximum thoroughfare visibility with a minimum of waste to sky or property. They insure added economies in these advantages: lower maintenance costs, reduced breakage, easier servicing. . . . Ask your manufacturer for full information on Holophane Refractors—or write direct to Holophane Street Lighting Department, Newark, Ohio.

★ SEND for New Bulletin: "I. E. S. Recommended Practice for Street Lighting 1940"

(Photo above: Waterloo, Illinois . . . Line Material, Spherolite with Refractors)

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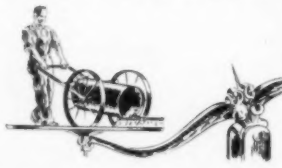

Sprinkle on your drives, road shoulders, parking areas, tennis courts, sand traps—weeds shrivel, die.

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No. 101 LITTLEFORD UTILITY SPRAY TANK

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LITTLEFORD BROS.
500 E. Pearl St., Cincinnati

Here's the unit with Exclusive Features—Leakless Cocks, Operators Step, Direct Drive from Engine to Pump, etc. It's the only real Utility Black-Top Maintenance unit.

Street-Lighting Rates Paid by Oakland, Calif.

STREET lighting in Oakland, Calif., is paid for on a flat-rate basis at a fixed price per unit per month, according to the classification, type, size, and burning schedule of the unit. The rates are fixed or approved by the State Railroad Commission. Service is supplied by the Pacific Gas and Electric Co.

The current prices shown are for various classes and sizes of units. These are divided into four groups, as described under the respective headings. Nearly all the so-called ornamental lighting is divided into two groups according to ownership of the interconnecting underground circuits.

In addition to the lamps listed, there is a small amount of subway lighting which is supplied with metered energy and maintained by the city. There are also 410 street lights of various sizes, including 208 single-light 200-watt electroliers, which are maintained without cost to the city by public utilities, mostly electric railways, in accordance with franchise obligations.

Group 1. Overhead Lighting

The pendent overhead lamps, suspended from brackets on power poles, are owned, installed and maintained by the company. All lamps burn on all-night schedule, approximately 4,000 hours per year, except Class SX-21 lamps. Rates given include energy and maintenance.

Group 2. Ornamental Lighting

Lighting standards with equipment thereon (but without any underground circuits) installed at cost of property owners and owned by city. Entire underground installation installed and owned by serving company. Lighting schedule, approximately 4,000 hours and 1,635 hours per year for all-night and part-time lamps, respectively. Part-night lamps extinguished at 11 P.M. Rates below given include energy supply and all maintenance (replacement of lamps, glassware, cleaning, painting, and other work), except replacement of wrecked standards. Practically all installations coming under this group have become obsolete. They will gradually be replaced with systems that will come under Group 3, the city having discontinued some years ago the practice of installing ornamental systems without the interconnecting circuits.

Group 3. Ornamental Lighting

Lighting standards, completely equipped, together with interconnecting underground circuits installed at cost of property owners and owned by city. Company connects to terminals of city's circuits. Lighting schedule, approximately 4,000 hours and 1,635 hours per year for all-night and part-night lamps, respectively. Part-night lamps extinguished at 11 P.M. Rates above given include energy supply and all maintenance (replacement of lamps, glassware, cleaning, painting and other work), except replacement of wrecked standards. In practically all these systems where the lamps are of 600 cp or larger, a portion of the cost of energy and maintenance is assessed annually against the property fronting on the street or streets in which the system is installed.

Group 4. Additional Classifications

In this group, the rates given, unless otherwise expressly stated, include energy supply and all maintenance, except replacement of wrecked standards.

This article is part of a survey of street-lighting costs just made by THE MUNICIPAL INDEX.

Group 1

Number	Designation	Pendent Size and Type	Rate Per Month
1	B-1	500-watt multiple lamps with symmetric refractors	$4.45
5	B-5	200-watt multiple with symmetric refractors	2.55
5201	C-1	100-cp series with reflectors	1.43
342	D-3	250-cp series with symmetric bowl refractors	2.28
124	D-4	250-cp series with asymmetric refractors	2.28
16	E-4	400-cp series with asymmetric refractors	2.77
1	F-2b	600-cp series with refractors; suspended from simple ornamental brackets; underground connections; average spacing not over 200 ft.	4.26
275	F-3	600-cp series with symmetric bowl refractors	3.36
183	F-4	600-cp series with asymmetric refractors	3.36
1	X-21	500-watt multiple floodlights, all-night	5.20
5	SX-21	500-watt multiple floodlights, part-night	4.29
1	G-15-S	10,000-lumen sodium lamps, symmetric distribution	5.22
29	G-16-S	10,000-lumen sodium lamps, asymmetric distribution	5.22

Group 2

Number in use	Class Designation	Size and Type	Rate Per Month
34	H	220-watt multiple 3-light electroliers (1 100-watt and 2 60-watt lamps), all lamps all-night	$3.08
33	SH-1	Ditto, part-night	1.80
1	J	340-watt multiple 5-light electroliers, all-night	4.40
1	SJ-1	Ditto, part-night	3.50
164	L	200-watt multiple 1-light electroliers, all-night	2.52
155	SL-1	Ditto, part-night	1.80
9	M	300-watt multiple 1-light electroliers, all-night	3.08
3	SM-1	Ditto, part-night	2.51
14	P	100-cp series 1-light electroliers, all-night	1.69
19	Q	250-cp series 1-light electroliers, all-night	2.31
17	SQ-1	Ditto, part-night	1.81
5	R	400-cp series 1-light electroliers, all-night	2.80
10	SR-1	Ditto, part-night	2.31

Group 3

Number in use	Class Designation	Size and Type	Rate Per Month
55	U	100-cp series 1-light electroliers, all-night	$ .84
16	U-9	100-watt multiple 1-light electroliers, all-night	1.07
3	U-11	200-watt multiple 1-light electroliers, all-night	1.60
91	W-2	600-cp series 1-light electroliers, all-night	2.42
148	SW-3	Ditto, part-night	1.76
32	W-24-S	10,000-lumen sodium-vapor series 1-light electroliers, all-night	3.40
34	SW-24-S	10,000-lumen sodium-vapor series 1-light electroliers, part-night	2.06
247	SW-21	1,200-cp 2-light electroliers, each with two 600-cp lamps; both lamps part-night	3.41
250	SW-22	Ditto, except one lamp all-night, one lamp part-night	4.07
380	SW-13	2,000-cp 2-light electroliers, each with two 1,000-cp lamps; both lamps part night	4.99
366	SW-16	Ditto, except one lamp all-night, one lamp part-night	5.97

Group 4

Number in use	Class Designation	Size and Type	Rate Per Month
8	U-7	25-watt multiple lamps, all-night for safety stations and similar purposes. Installation, including interconnecting underground circuits, owned by city	$1.25
3	U-8	50-watt ditto	1.50
62	U-9x	100-watt special 1-light electroliers, all-night	1.17
6	U-9z	100-watt special 1-light electroliers, all-night	1.17
15	X-4	200-watt multiple lamps, all-night, special service, energy only	1.08
1	X-26	250-cp series lamps, all-night, special service, energy only	.86
59	SW-22	2-light standards, each with two 600 cp lamps, one lamp all-night, one lamp part-night; installation, including interconnecting underground circuits, owned by city	4.07
71	W-2	1-light standards, 600-cp lamps, all-night; installation owned by city	2.42
74	SW-3	Ditto, part-night	1.76

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Electrification of existing valves, sluice gates and floorstands with Chapman Motor Units is the most effective method we know of to conserve man power and increase plant operation efficiency. With the Chapman system of *push button control*, scores of valves can be operated in the time it takes for a single manual operation, and one-man control of a far flung system of valves and gates can be made simpler, safer and more efficient than any method of hand operation.

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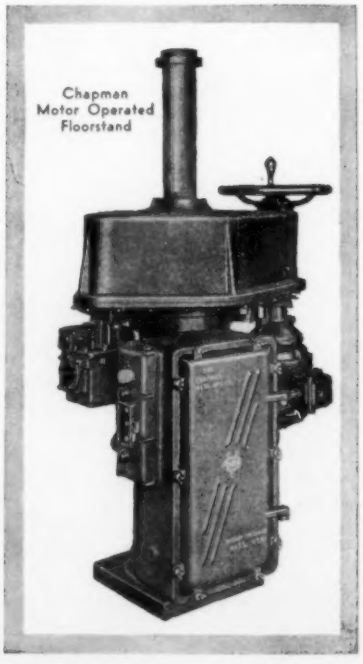

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Zoning and Planning Notes

With the cooperation of
EDWARD M. BASSETT
Author of "Zoning" and of "The Master Plan"

Non-Conforming Use—Determination of Board of Appeals—Additional Evidence on Appeal

NEW YORK.—*Matter of Clinco v. Murdock*, April 7, 1941, reported in 261 App. Div. 570, 26 N. Y. S. 2d, 613.—The premises in question were used as a stable and hay loft in 1916, when the Zoning Resolution of the City of New York was adopted and placed the property in a residential district. No new buildings for a non-conforming use therefore could thereafter be erected in this zone, and no old buildings in it could be structurally altered to be occupied and used for a non-conforming use unless the use proposed was already in existence or a variance secured.

Subsequently the owner sought to use the property as a fur-dressing factory and obtained a permit so to do.

When the matter came before the Board of Standards and Appeals of the City of New York, the Board revoked the permit. No proof was offered in respect to the question whether the stable and loft in existence in 1916 was a conforming or a non-conforming use. This question was first raised on appeal to the Supreme Court. That Court referred the matter to an official referee to hear and report with his findings, and upon his report reversed the determination of the Board.

Upon appeal from the Supreme Court to the Appellate Division, this Court says in part:

"It appears that the order was made upon evidence not before the Board. The effect of the reference was to enable the Court to exercise its discretion in place of that of the Board upon evidence adduced before the referee which was not in that form offered to the Board. This it could not do. . . . If this proof was deemed necessary for the proper disposition of the matter and merited consideration, the whole matter should have been remitted to the Board for the purpose of receiving the evidence and acting thereon. It was new argument and new evidence, advanced to overrule the ruling of the Board, upon which the Board had never acted."

The Appellate Division therefore remitted the proceedings to the Board of Standards and Appeals with instructions to make a finding of fact on the question of whether the use of the property at the time the Zoning Resolution went into effect was a conforming or a non-conforming use, with leave to the parties to introduce further evidence upon another hearing, if another hearing is had.

EDITOR'S NOTE.—When a determination of a board of appeals is brought before a court, the law in the state of New York, and many other states, authorizes the taking of additional evidence. This, however, was not a case of taking *additional* evidence. Both the issue and the evidence were entirely new.

New Planning Legislation in Wisconsin

The state of Wisconsin has adopted a comprehensive statute* revising and codifying the planning laws of the state with regard to the planning of cities and villages. This revision, prepared by the League of Wisconsin Municipalities, is in accord with the best modern practice. It contains provisions for a master plan, an official map, zoning, and a board of appeals, and correlates this measure with the control of real estate subdivision.

The master plan is kept fluid. It is adopted, and may be amended, without hearings or action by any other body. The commission is thus free at any time to embody in the plan its latest considered judgment, as a basis for its advice to other departments of the city or village.

The official map is kept distinct from the master plan, thus avoiding confusion, or conflict. This is important, for the master plan shows the general location of the elements deemed essential to community development; while the official map gives the precise location of such of them as are considered immediately attainable, and they may therefore be immediately translated into physical action.

The official map shows the precise location of streets and parks. Any physical improvement of these features must first be shown as a change in this map. Before the council can take final action upon any such change, the matter must be referred to the planning commission. To act contrary to its report, however, a two-thirds or three-fourths vote is not, as in many jurisdictions, required, a majority vote sufficing in Wisconsin. This, although regrettable, may be necessary. In order to preserve the integrity of the official map, no permit may be issued for any building in the bed of a mapped street, or any building not abutting on a highway shown on the official map, except in specific cases on appeal to a board of appeals, on proof of practical difficulty of unnecessary hardship.

The zoning plan must be prepared by the city plan commission or other body with like powers. Susequent amendments must be referred to the planning body, but the local legislative body may overrule its report of a majority vote. There is a twenty per cent protest clause.

The section with regard to non-conforming uses, more restrictive than that in many other zoning ordinances, provides that such a use shall not be extended; that the total structural repairs shall not exceed fifty per cent of the value of the building unless the use is changed to a conforming use; and that if a non-conforming use is discontinued for a year, any future use must be conforming.

* Ch. 203, 1941.

City Manager Appointments

James C. Causey, Jr., City Engineer, was named acting City Manager of Suffolk, Va., on June 19, to succeed R. H. Brinkley, who resigned.

William J. Deegan, Jr., City Manager of Fernandina, Fla., since 1938, has succeeded Grant Bly, who had served as Manager of DeLand, Fla., since 1933.

Floyd Eoff has replaced R. E. Clement as City Manager of Norman, Okla.

Hobart Greene, City Engineer for the past two years, on June 19 was appointed City Manager of Johnson City, Tenn., to succeed Murphy U. Snoderly.

M. E. Haug, City Engineer, has been appointed to succeed Charles F. Harper as City Manager of Portsmouth, Va.

Clarence Harris, former Chief of Police, has been appointed City Manager of Ardmore, Okla., to succeed Lee H. Tyer.

M. Perry Hobbs, Town Engineer of Mansfield, Mass., was appointed first Town and Village Manager of Northfield, Vt., effective July 1.

Leonard G. Howell, since 1930 City Manager of Ironton, Ohio, has been appointed first City Manager of Port Huron, Mich., effective August 1.

John D. Lange, Assistant City Manager of Greendale, Wis., will become first City Manager of Palm Springs, Calif., on September 1.

O. M. Lanham, former Manager, and more recently Manager of Moultrie, Ga., has been appointed Acting Manager of Waycross, Ga., to fill the unexpired term of L. V. Bean, who has been called into active military service.

H. D. Lester has been appointed City Manager of Wichita, Kans., effective September 1, to succeed Donald Gordon.

Robert W. Palmer, City Manager of Ashland, Maine, since 1935, has been appointed City Manager of Fort Fairfield, Maine.

Wallace W. Washer has been appointed City Manager of Asbury Park, N. J., to succeed Milford G. Farley.

LeRoy Wolfe has replaced H. C. Laughlin as City Manager of Kenosha, Wis.

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Right of City Officers and Employees to Retain City Positions While Serving in Federal Military Forces

The recent case of the *City of Lynchburg* v. *Suttenfield*, 13 S. E. (2d) 323, (Va. Sup. Ct. of App. Feb. 24, 1941), has focused attention on the specific problem of the right of city officers to retain their municipal offices while actually serving in the Federal military forces. The plaintiff, City Councilman, who receives compensation in the amount of $500 annually, was ordered into the Federal military service in September, 1940, in his capacity as an officer of the State National Guard. A state statute forbids dual employment or compensation by the United States and by state or local subdivisions, but exempts officers or soldiers receiving compensation for "actual duty." The Court affirmed the decision of the Corporation Court of the city and held that the term "actual duty" pertains to Federal military service, as well as to the usually irregular National Guard maneuvers or duties. Likewise, the defendant's contention that this ruling would hinder the efficient administration of city affairs was deemed a legislative, not a judicial, concern.

The Supreme Court of Texas on October 24, 1940, Reh. Den. Nov. 22, 1940, in *Carpenter* v. *Sheppard*, 145 S. W. (2d) 562, reached the same conclusion as the Virginia Court. The Texas Court held that the Chairman and Executive Director of the Unemployment Compensation Commission did not vacate his office by accepting an appointment as a Major in the United States military forces under the Joint Resolution of Congress authorizing the President to call the National Guard into Federal service. Since he continued to discharge his office as Director of the Commission, it was held that he could receive his regular salary. The constitutional provision that a person holding an office of trust or profit under the United States could not hold or exercise an office of trust or profit under the state was declared to be inoperative since the plaintiff Director held a military rank, primarily as an officer of the State National Guard, and now, secondarily as a United States officer.

In *Fekete* v. *City of East St. Louis*, 315 Ill. 58, 145 N. E. 692, 40 A. L. R. 650 (1924) the Court held that a City Attorney who accepted a commission in the United States Army vacated his office as City Attorney, where the state constitution provided that no person holding an office of honor or profit under the Government of the United States shall hold any office of honor or profit under the authority of the state.

In *Reed* v. *Schom*, 2 Cal. App. 55, 83 P. 77 (1905) it was held that a retired Army officer did not hold a lucrative "office" within the meaning of a constitutional provision making ineligible to any civil office of profit under the state any person holding any lucrative office under the United States, and he was eligible to hold the office of Mayor of the city of San Diego. The Court said that while a retired Army officer might be detailed to perform military duties, he would not be considered as holding an "office" as contemplated in the constitutional provision.

In State v. *DeGress*, 53 Tex. 387 (1880) the Court held that a retired Army officer was ineligible to hold the office of Mayor of the city of Austin. The city charter provided that no person should occupy that position who held any lucrative office under the authority of the United States. The Court said in part:

"By express enactment, officers of the Army on the retired list constitute a part of the Army of the United States; retain the actual rank held by them at the date of retirement; receive 75 per centum of the pay of that rank; are subject to trial by court-martial for any breach of the rules and articles of war, and may be assigned to duty; that such an officer holds a lucrative office under authority of the United States; or, in the language of our state constitution, 'an office of profit or trust under the United States,' is too plain to admit of being made more so."

In *People ex rel Ward* v. *Drake*, 43 App. Div. 325, 60 N. Y. Supp. 309 (1899) affirmed without opinion in 161 N. Y. 642, 57 N. E. 1122 (1900) under the city of Buffalo's charter providing that "no person elected to any salaried office under this act shall, during his term of office, hold any other public office," and that if any such person does "accept any other public office, he shall thereby cease to hold his office," a Water Superintendent who accepted a commission as Lieutenant Colonel in the United States Army was held to have vacated his city office. This conclusion was held not affected by the facts that a leave of absence had been granted, and a resolution adopted by the Buffalo City Council that any employee who enlisted should not lose his position by reason of his military service.

In *Oliver* v. *Jersey City*, 63 N. J. L. 96, 42 A. 782 (1899) the Court held that the position of Colonel in the United States Army was an "office" within the meaning of a statute creating a Board of Street and Water Commissioners, and providing that no commissioner should accept or hold any other place of public trust or emolument within the elective franchise, "nor any appointment to public office." Since he so accepted such other office without having resigned his office as Commissioner, his office of Commissioner thereupon became vacant. This decision was reversed in 63 N.J.L. 634, 44 A. 709, 48 L.R.A. 412 (1899) on the ground that even if the acceptance of the Army position terminated the Commissioner's de jure title to that office, yet, where he continued in good faith publicly to discharge the duties of the office, without adjudication of the title or appointment of a successor, he was an officer de facto, and his official acts were valid so far as the rights of third persons and the public were concerned.

In *Johnston* v. *Chambers*, 148 Ga. 768, 98 S. E. 263 (1919) it was held that membership on a local draft board created under the provisions of the Selective Draft Act of 1917 did not disqualify the member from holding the position of Police Commissioner of the city of Atlanta under a charter provision making it unlawful for any person holding any office or position of trust under appointment by the President of the United States or any department of the Federal Government to hold office or employment under the city government. See in accord as to judges, the case of *Opinion of the Justices*, 29 N. E. (2d) 738 (Mass. 1940).

It is the general rule that acceptance of one public office effects a resignation of another office which is incompatible therewith. This incompatibility may arise out of the duties of the respective offices or because of some positive provision of law, constitutional or statutory. The above cases seem to follow no well-defined rules, as the Court in each instance weighs the various interests involved in the particular case and makes a decision based upon the particular facts before it. While the cases cited exhaust the court decisions involving city officials, there are cases on this subject involving state officials which are collected in the annotation entitled: "Incompatibility of Offices or Positions in the Military, and in the Civil Service," 26 A.L.R. 142. See "National Defense and Municipal Legal Problems," Report No. 71, National Institute of Municipal Law Officers.

Airports—Duty of City to Continue Ground Warnings

The Michigan aircraft statute provides normal tort liability for negligent operation of an airport by its owner, including a municipality. As a matter of tort law, however, a city is not breaching a duty assumed if it discontinues a practice it had established of giving ground warnings. *Finfera* v. *Thomas*, 119 F. (2d) 28 (C. C. A. 6th, 1941) (Detroit airport).

Annexation—De Facto Authority—Collateral Attack

Where a taxpayer has for many years paid taxes under the assumption that the taxed property was validly annexed to the city, he cannot object to the validity of the annexation proceedings, and the Court will not consider the question of its validity. *Lowden* v. *Hooper, County Treasurer*, 112 P. (2d) 172 (Okla. 1941).

Civil Liberties—Religious Freedom

In an action against one of Jehovah's Witnesses for carrying and displaying a showcard without a permit and for commercial use of a street without public permission, the Boston city ordinance regulating the display of showcards is invalidated as a violation of civil liberties (free press and free religion); while a companion ordinance of the same city requiring permission for the use of the streets for the sale of merchandise, etc., is sustained as a proper public regulation of the streets in spite of its effect of civil liberties. *Commonwealth* v. *Pascone*, 33 N. E. (2d) 522 (Mass. 1941).

Civil Service—Dismissal—Undated Resignation

A Civil Service employee is entitled to the statutory procedure for dismissal even after reinstatement following a prior suspension. An undated resignation to be effective if and when the employee violated the rules of the bureau is an nullity and will not take the place of the procedure requiring a hearing, etc *In re Geis*, 19 A. (2d) 368 (Pa. 1941).

Contracts—Recovery and Authority

A person contracts with a public authority with knowledge of the limitations thereon at his own peril. A person who has rendered services to a borough under a contract which obligates the borough to spend more than $500 cannot mandamus payment without a written contract as required by statute. *Angelotti* v. *Borough of Rankin*, 19 A. (2d) 398 (Pa. 1941).

Taxation—Licenses—Theaters and Opera Houses

A motion-picture theater is held exempt from a license tax exempting theatrical or minstrel performances when held in an opera house. The statute was adopted in 1885 and the Court holds that the present-day motion-picture house is in the same legal category as the 1885 opera house. *St. Louis Amusement Co.* v. *St. Louis County*, 147 S. W. (2d) 667 (Mo., Feb. 14, 1941).

Tort Liability—Notice of Defective Condition

Where the work of flooding a skating rink was being done by city employees and a party was injured by ice which was run onto the sidewalk in that operation, no notice of the defective condition need be proved, since the city will be charged with the knowledge of its employees. *Franks* v. *Sioux City*, 296 N. W. 224 (Iowa, Feb. 11, 1941).

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Planning Administration

Local Planning Administration.—By Ladislas Segoe, with the collaboration of Walter H. Blucher, F. P. Best, F. Stuart Chapin, Jr., Erwin A. Kraemer, John G. Marr, Arthur J. Rabuck. The Institute for Training in Municipal Administration, 1313 E. 60th St., Chicago, Ill. 1941. xii + 684 pp., lithoprinted. $7.50, loose-leaf binder.

This large, comprehensive volume gives, for the first time, a well-organized, systematic presentation of the *how* of planning, as opposed to much of the planning literature which has dealt with the *what* of planning and the general need for it. Prepared specifically as a text for the in-service training course for local planners and administrators given by the Institute for Training in Municipal Administration, its purpose—admirably carried out—is to make available to municipal administrators, city engineers and non-technical planning officials a sound foundation in the objectives, principles, and methods of planning, so that they may adequately understand and evaluate the work of planning technicians; and to supplement the technical training of planning specialists with a better understanding of how to administer planning.

Principles and practices are illustrated by examples from accepted practices. The fifteen chapters cover: The Development and Value of Community Planning; Organization of City Planning; Base Maps and Fundamental Data for City Planning; Basic Studies for Planning; The Street System; Traffic, Parking, and Transit; Transportation; Public Utilities Other Than Transit and Transportation; Zoning; Housing, Rehabilitation of Blighted Areas and Slum Eradication; Recreation; Subdivision Control; Public Buildings and Improving the Appearance of the City; Capital Improvement Programs and Carrying Out the City Plan; Relationship of City Planning to Other Planning Units. (See p. 97.)

Centralized Government Purchasing

Centralized Purchasing—A Sentry at the Tax Exit Gate. Purchasing Laws for State, County, and City Governments.

Both by Russell Forbes, Ph.D., Commissioner of Purchase, City of New York. National Association of Purchasing Agents, 11 Park Place, New York. 1941. Revised Editions. 38 pp., 35 pp., respectively. Free.

The first of these pamphlets gives a brief, straightforward presentation of the desirability and practicability of centralized purchasing for government supplies, materials and equipment. The second explains the way in which a centralized purchasing agency may be established by law, pointing out current legislation and practice.

Prefabricated Housing

A Design for Living—The Low-Cost Electrified Home developed by The John B. Pierce Foundation.—An Address by Henry J. Morton at the Ninth Annual Convention, Edison Electric Institute, Buffalo, N. Y., June 4, 1941. Published by The John B. Pierce Foundation, 40 W. 40th St., New York. 1941. 16 pp.

This pamphlet describes a model, experimental, prefabricated, low-cost house which has been developed over a period of years by The John B. Pierce Foundation, to sell for $3,000 to $3,500, including the cost of land and about 12 pieces of built-in furniture and 24 feet of shelving. The pamphlet outlines, with detailed illustrations, the following steps of construction and house features: prefabrication; site preparation; erection; interior; heating; plumbing; furniture; electrical equipment. Several pages are devoted to an explanation of plastic surface wiring.

City Administration

Municipal Management.—By Thomas Harrison Reed. McGraw-Hill Book Co., Inc., New York. 1941. ix + 665 pp. $4.00 from THE AMERICAN CITY.

As Dr. Reed points out in the Preface of this volume, the early books on municipal administration were concerned with the details of performing municipal functions—how to pave a street, construct an incinerator, etc. This book deals not with service techniques, but with the administrative aspects of carrying them out—with municipal organization and the principles, standards, and procedures of smooth-running, efficient municipal management. The approach is primarily practical, dealing with concrete cases and experiences, and covering cities of all sizes and types. The five main parts are: Introductory, which describes the types of management; Basic Administrative Relationships—the part of the council, the executive and his relation to the public, the council and department heads, and the inter-relation of governmental units; Financial Management, covering, from the managerial viewpoint, financial controls, assessment and taxation, and debt; Other Staff Activities, including personnel, legal advice and representation, research and planning, and other miscellaneous functions; and Management of Operating Services.

Training Sanitation Personnel

In-Service Training Course on Functions of the Department of Sanitation, New York City.—Ten lectures by various members of the Department, delivered at Hunter College, Spring, 1941. 10 to 20 mimeo. pp., each.

These ten lectures, which were followed by discussion meetings in the various New York boroughs, covered the following aspects of the work of the Department: administration of the Division of Street Cleaning; diversified activities of this Division—planning, truck measuring, safety, snow removal; landfills; work of sanitation men, classes "A," "B," and "C"; functions of the Division of Waste Disposal; street-cleaning operations in the five boroughs; operation of motor equipment; work of the Medical Division, of the Bureau of Inspection, and of sanitary education; employee discipline.

Population

What the New Census Means.—By Stuart Chase. Public Affairs Committee, Inc., 30 Rockefeller Plaza, New York. 1941. 30 pp. 10c.

Stuart Chase, in his fresh, readable style, presents here the principal findings of the 1940 census—trends in the nation's population; age, regional, and city-country distribution; the factors that affect population rates; probable future trends and what they will mean for business, schools, war, land and housing, run-down areas, and many other sectors of national and international life.

Population—New York Region

Population Changes and Their Significance in New York and Its Environs.—Regional Plan Bulletin, July 14, 1941, Number 55, Regional Plan Association, 400 Madison Ave., New York. 16 pp. 25c.

Reading this bulletin is like seeing a fast-tempo motion picture of the movements of the peoples of the New York region, from the middle of the nineteenth century, particularly from 1920 to 1940, with a glimpse into the future. Population trends indicated by the 1940 census are pointed out, showing the rate of increase, distribution and movements of people within the region, comparison of New York population trends with those of the nation, and probable future trends. Effective maps and charts picture the text.

National Defense

Fire Defense.—Edited by Horatio Bond, Chief Engineer, National Fire Protection Association, 60 Batterymarch St., Boston, Mass. 1941. x + 221 pp. $1.50.

A compilation of available material on fire defense, in six main parts. The first describes the various types of air-set fires, and the means of handling them; the second part is devoted to sabotage; the third, to organization for civilian defense, with an account of plans now set up; the fourth, to fire departments and fire fighting; the fifth, to communications; the sixth, to the protection of defense production.

Finance and Defense

Effect of Defense on Municipal Finance.—The August, 1941, issue of "Municipal Finance," published by the Municipal Finance Officers' Association of the United States and Canada, 1313 E. 60th St., Chicago, Ill. 32 pp.

The problems confronting local finance as a result of the defense program, including general articles on finance in all cities as affected by defense and in defense-connected communities, with descriptions of particular cities and their special problems.

Community Health

Community Organization for Health Education—Report by the Committee on Community Organization for Health Education of the American Public Health Association to the Public Health Education Section and the Health Officers Section. The American Public Health Association, 1790 Broadway at 58th St., New York. 1941. ix + 120 pp. 9c in stamps.

Although individual programs of health education are being carried out in many communities, there is need, this report points out, for coordination of separate programs—for an over-all approach to the community's needs. The whole problem, and the place of different agencies in it, is analyzed, and examples are presented of city and state organization for health education.

Citizen Organization

Citizens Research Agencies and Taxpayers Associations.—Governmental Research Association, 5135 Cass Ave., Detroit, Mich. 1941. 32 pp.

The purposes, policies, and methods of citizens research agencies and taxpayers associations are discussed in eight papers published here, which were presented at two sessions of the 1940 meeting of the Governmental Research Association, held in September, 1940, at Princeton, N. J. Topics covered include the attitude of such agencies on certain municipal problems such as tax limitations, homestead exemption and the assessment of property on the basis of income; the survey audit versus the organization and procedural survey; selling the efficiency and economy program.

Urban Sociology

May, 1941, issue of The American Journal of Sociology.—The University of Chicago Press, Chicago, Ill. 91 pp. $1.00.

Devoted to articles on the community, this collection presents the newer forms of community study and research from the sociological point of view. Discussions deal with the forces and process of urban centralization and decentralization; the theory of location of cities; the political organization of London in time of crisis; organization of depressed areas in urban communities; the evolution of the American community; the social survey; ways in which sociological study may be of value to the architect in home planning; and other subjects.

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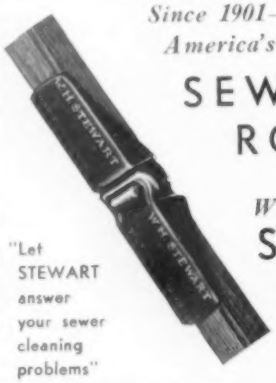

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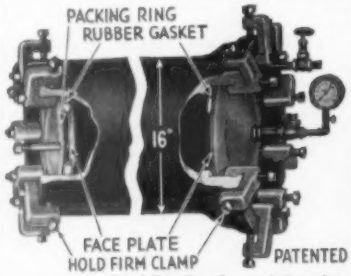

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Library Design

The American Public Library Building.—By Joseph L. Wheeler, Librarian, and Alfred Morton Githers, Architect. Charles Scribner's Sons, New York. 1941. 484 *pp.* $4.00 *from* THE AMERICAN CITY.

Written by a librarian and architect, this book covers the planning and design of library buildings, with special reference to their administration and service. A handsome encyclopedic volume, having more than 500 illustrations, its low price is made possible by a subsidy from the Carnegie Corporation. It sets forth the trustees' part of the library program, in relation to community analysis, costs, library site, architect and technical advisory service, and plans, specifications and contracts; and discusses the various departments and elements of the building and their relationships. More than 150 libraries built in the last 20 years in all types of communities, are described. Building structure and equipment are considered in a final part of the book.

America

America.—By David Cushman Coyle. National Home Library Foundation, Sherman F. Mittell, Editor, Washington, D. C. 1941. 91 *pp.* 25*c, cloth-bound.*

A popular account covering the high points of America's present relation to the rest of the world and in the war situation, what America stands for and the value of democracy, and some of this country's most pressing problems both now and when the war is over. Nazism is analyzed, propaganda is defined, and an analysis is made of what freedom consists of. (See p. 71 for reprint of Chapter 11, "Belonging.")

Trailer Regulation

House Trailer Regulation—Report No. 147.—American Municipal Association, 1313 E. 60th St., Chicago, Ill. 1941. 48 *pp.* $1.00.

This factual study brings up to date the information contained in 1937 publications of the Association on the subject of trailer regulations, taking account of developments due to the defense program, and of interest in the subject which has spread beyond the city to other levels of government. A brief history of the trailer movement is followed by a discussion of recent city and state regulations and their litigation. Other special phases considered are taxation of trailers, "residence" for public school purposes and for voting, trailers and education, trailers and health problems, and Federal interest in the subject. Appendices contain various model regulations, including the Suggested Trailer Ordinance listed below.

Suggested Ordinance for the Regulation of Trailer Coach Parking and Trailer Parks.—Issued by the Consumer Division, Office of Price Administration and Civilian Supply, Office for Emergency Management, Washington, D. C. 1941. 12 *pp. Free.*

Prepared particularly for use in crowded communities where defense activities are centered, this model ordinance provides for the safety, health, and convenience of trailer families, and for the protection of the community, covering such aspects as the trailer park plan and its zoning, sanitary facilities, sewerage and refuse disposal, and the removal of trailer wheels.

Delaware River Basin

Incodel Maps, Charts, Graphs.—The Interstate Commission on the Delaware River Basin, Broad Street Station, Philadelphia, Pa. 1941. 14 *pp.*

Intended to accompany the bibliography of publications published by the Commission, this handbook lists and describes base maps, factual maps, charts and graphs, and other reference material prepared by the Commission, covering technical work on water-supply diversions and other features of the work-program.

Illinois Finance Study

Drainage District Organization and Finance, 1879-1937.—Volume VII, Survey of Local Finance in Illinois. Prepared by Illinois Tax Commission, 33 N. LaSalle St., Chicago, Ill., in cooperation with Work Projects Administration. 1941. 213 *pp.*

Volume VI, which is concerned with special assessment financing of local improvements, and this volume, contain together a full analysis of the use of the special assessment revenue devices in Illinois. Dealing with the organization and finance of the 1,541 drainage districts in the state, it has three main chapters: Scope of Drainage District Problems in Illinois; Development of Drainage District Organization; Procedure under the Law Governing the Drainage of Rural Lands for Agricultural, Sanitary and Mining Purposes. Complete maps of the drainage districts of the state have been made for the first time, and are included.

City's Legal Powers

The Number 1 Municipal Law Problem: Home Rule, and Report of the City of Chicago Law Department for 1940.—By Barnet Hodes, Corporation Counsel, Chicago, Ill. 1941. 150 *pp.*

Besides a report of the work of Chicago's legal department in 1940, this publication contains a well-presented, comprehensive study of the home-rule problem for that city. tI points out the serious handicaps Chicago suffers in being unable to adequately control public health and safety, city planning, emergency relief and other vital functions. It presents definitive recommendations for action, with suggestions for interim legislative relief to give greater powers of self-government to Chicago until constitutional home rule becomes a reality. A 13-page bibliography on home rule and the text of home-rule provisions in eighteen states are included.

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Budget Study

Research in Public Budget Administration.—Prepared under the auspices of the Committee on Public Administration, Social Science Research Council, 261 Broadway, New York. 1941. 37 *pp.* 50c.

The latest in a series of publications containing systematic suggestions for research, this outline was prepared with the aid and advice of some 30 administrators, scholars, and governmental research men. For each of the 17 lines of inquiry suggested, current developments and thought are indicated, and a list of the questions which need investigation are given.

Housing Rents

Graded versus Proportional Rents in Public Housing.—Prepared by Beatrice Greenfield Rosahn, in cooperation with Committee on Housing Management, Citizens' Housing Council of New York, 470 Fourth Ave., New York. 1941. 50 *pp.* 50c.

The much discussed and argued advantages and disadvantages of graded or proportional rents for tenants in public housing projects, is the subject of this report. It analyzes the law on rentals; reviews 14 plans to meet the problem, which have been proposed or are in operation; and presents the recommendations which have been drawn up by the Committee on Housing Management.

Housing Study Guide

Economics of Housing.—By Bertram M. Gross, Lecturer, Graduate School, U. S. Dept. of Agriculture, Washington, D. C. Apply to the author, 304 Poplar Ave., Takoma Park, Md. 20 pp., mimeo. 25c.

An outline to be followed in the study of housing economics, with suggested reading material for each topic, is given in this pamphlet. The main part is devoted to the fundamental economic problems of housing production—consumer income, construction, land, finance, management, taxation, competition with investment in existing homes, and subsidy. The general housing problem is also briefly reviewed, and the special problems of farm and defense housing and the consumer's approach to housing have each a chapter devoted to them.

Indian Cities Year Book

All India Local Government, Desk Diary, 1941—India and Burma.—The Indian Union of Local Authorities, Lahori Gate, Delhi, India. 1941. 144 *pp.*

Year book containing a description of the Indian Union of Local Authorities and its activities; postal information; a list of provincial holidays; a summary description of local self-government in the various provinces of India; and data on Indian municipalities—finances, population, and officials. Blank diary pages follow the numbered pages.

Massachusetts Recreation

Park, Parkway and Recreational Area Study.—Prepared by Massachusetts State Planning Board, 41 Beacon St., Boston, in cooperation with National Park Service, U. S. Department of the Interior. 1941. xiii + 118 *pp.*

A thorough over-all investigation of Massachusetts recreation needs and resources, and land, administrative and fiscal plans, is made in this report. Conclusions are drawn and detailed recommendations drawn up. (See p. 91.)

Rural Communities

Building Rural Communities—Proceedings of the Twenty-Third American Country Life Conference, Lafayette, Ind., Nov. 6-9, 1940.—Published by The University of Chicago Press, Chicago, Ill., for the American Country Life Association, 297 Fourth Ave., New York. 1941. 171 *pp.* $2.00 *from* THE AMERICAN CITY.

Problems of the rural community—planning, community organizations and meetings, schools, community art and dramatics, and problems of rural youth.

Legal Research

Selected Research Reports—Report No. 74.—National Institute of Municipal Law Officers, 730 Jackson Place, Washington, D. C. 1941. 14 *pp.* $1.00.

Originally prepared in answer to inquiries received by the Institute, published here because of their general interest, research reports on questions relating to Boats; City Employees; Handbooks; Milk; Moving Picture Theaters; Parking; Radio Towers; Signs; Taverns; Taxation; Wage Tax.

Home Rule and Taxation

"Home Rule" in Texas Cities.—B. H. A. Turner of the Fort Worth Bar, Dan Waggoner Bldg., Fort Worth, Texas. 1941. 36 *pp.*

The way in which the true intent of home-rule government has been perverted in Texas, is the subject of this treatise. Contents are as follows: Constitutional Limitations on the Power of Texas Municipalities to Levy Taxes and Create Indebtedness; Market Value the Measure of Taxable Value; Public Purpose Clause—Evasion Thereof; Suggested Remedies; Conclusion.

Construction Standards

Building Code of the City of Schenectady, New York.—Building Code Committee. 1941. 171 *pp.*

This document is the result of over three years' work by a committee of city officials and citizens interested in building construction, with the aid and advice of experts in the various fields of construction. It covers: Administration; Light and Ventilation; Means of Egress; Material, Loads and Stresses; Design and Construction; Safeguards during Construction; Fire Protection; Chimneys and Flues; Heat Appliances; Special Occupancies; Elevators; Miscellaneous Equipment; Electrical Control; Fire Extinguishing Equipment; Signs and Billboards; Demolition; Vacation or Repair of Sub-Standard Buildings.

California Municipal Accounting

Data Concerning the Accounting Activities of City Clerks in Sixth-Class Cities of California.—Prepared by Paul Beckett, Research Assistant, Bureau of Governmental Research, University of California at Los Angeles, Calif.— 1941. 8 *pp., mimeo.*

Presented here are the tabulated answers to a questionnaire received from nineteen sixth-class California cities, on their accounting set-ups. They cover the size and type of staff; bookkeeping systems—double or single entry; and ordinances defining conditions of employment of city personnel.

New York Bridges

The Triborough Bridge Authority, Fifth Anniversary.—The Triborough Bridge Authority, New York. 1941. 53 *pp.*

Since 1936, five main and much-needed bridges have been constructed in the New York area, under The Triborough Bridge Authority. This report, dramatically illustrated, contains the brief, readable history not only of the erection of the bridges, but of the planning and building of metropolitan arterial ways and recreational facilities bordering and near the bridges and their approaches. Finances, boiled down to essentials, have been included in the report.

Highway Zoning

A Motorist's View—U. S. Route 1 from Maine to Florida.—By Elizabeth B. and Walter L. Lawton, National Roadside Council, 119 E. 19th St., New York. 1941. 12 *pp. Free.*

Some of the unlovely, billboard-blighted sections of U. S. Route 1 are pictured here, with data on the number of billboards there, and their increase in recent years. What some states have done about the situation, and what can be done to remedy it, are explained.

Planning Education

Citizen Youth and Town Planning.—New England Town Planning Association, 491 Boylston St., Boston, Mass. 1941. 11 *pp.*

Suggestions for teaching practical civics in the schools, through town planning projects. Possible projects are outlined, recommendations for map or plan drawing are given, and bibliography is listed.

Minnesota Municipal Statistics

1941 *Minnesota Year Book, Volume XII.—Published by League of Minnesota Municipalities, 15 University Library, Minneapolis, Minn.* 128 *pp.*

Besides state statistics, there are included in this year book data on finances and taxation of the local governments of Minnesota, and lists of officials and population figures for cities and villages.

Other Reports Received

ATLANTA, GA.—Annual Report, City Comptroller, 1940. 99 pp.

AUGUSTA, GA.—Year Book of the City Council, 1940. 70 pp.

BALTIMORE, MD.—The Baltimore Police Survey. By Bruce Smith. Assisted in the Collection of Materials by L. S. Timmerman. Institute of Public Administration, New York. 1941. 155 pp.

BRIDGEPORT, CONN.—Civil Service Provisions of the Charter and Rules of the Civil Service Commission. The Civil Service Commission. 1941. 35 pp.

BROOKLINE, MASS.—Second Annual Report of a Study of Advanced Programming and Budgeting. Made by a Special Committee. 1941. 16 pp.

CALIFORNIA.—Biennial Report, 1939-40. 143 pp.

DETROIT, MICH.—Annual Report, Board of Road Commissioners, County of Wayne. 101 pp.

GARDEN CITY, N. Y.—Annual Report, 1941. 35 pp.

JACKSONVILLE, FLA.—Yearbook, 1940-41. 99 pp.

LEWISTON, MAINE.—Municipal Activities, 1940-41. 48 pp.

LOS ANGELES, CALIF.—Annual Report, Social Service Commission, year ending June 30, 1940. 11 pp.

NEW YORK, N. Y.—Manual of Expense Accounts—Finding List. 1941. 222 pp.

NORFOLK, VA.—Report on Finances, 1940. 4 pp.

PHILADELPHIA, PA.—Administration of Permanent Registration in the City of Philadelphia. Report of the Governor's Committee to Investigate the Affairs of the Philadelphia Registration Commission. 1941. 88 pp.

—Philadelphia's Expenditures, 1928-41. Bureau of Municipal Research of Philadelphia. 79 pp.

RACINE, WIS.—Statistical Survey of Police Pension Fund, 1941. 23 pp.

ROYAL OAK, MICH.—What Do You Pay Taxes For? 1941. 6 pp.

SALINA, KANS.—Annual Report, City Clerk, and General Information of the City, 1940. 38 pp.

SPRINGFIELD, MASS.—The Springfield Police Survey Prepared for the Board of Police Commissioners, by Bruce Smith. Institute of Public Administration, New York. 1940. 55 pp.

Labor in the Defense Crisis.—By T. R. Carskadon. Public Affairs Committee, Inc., 30 Rockefeller Plaza, New York. 31 pp. 10c.

Municipal Legislative Barriers to a Free Market.—By John A. McIntire, Charles S. Rhyne. National Institute of Municipal Law Officers, 730 Jackson Pl., Washington, D. C. Reprinted from the symposium on Governmental Marketing Barriers, Spring, 1941, issue of Law and Contemporary Problems, Duke University Law School, Durham, N. C. 17 pp.

5

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Meeting is annual convention unless otherwise designated

August 14-16.—Provo, Utah.
STATE MUNICIPAL LEAGUE OF UTAH. (Hotel Roberts.) Sec., Tom McCoy, Public Safety Bldg., Salt Lake City, Utah.

August 18-20.—Council Bluffs, Iowa.
LEAGUE OF IOWA MUNICIPALITIES. Sec.-Treas., Frank G. Pierce, Marshalltown, Iowa.

August 18-21—Buffalo, N. Y.
INTERNATIONAL ASSOCIATION OF CHIEFS OF POLICE. Exec. Sec., Edward J. Kelly, 918 F St., N. W., Washington, D. C.

August 18-22.—Boston, Mass.
Joint meeting. (Mechanics Bldg.) NEW ENGLAND ASSOCIATION OF FIRE CHIEFS and the INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. Address: Daniel B. Tierney, Chairman Exhibit Committee, Fire Dept. Headquarters, Arlington, Mass.

August 26-29.—Washington, D. C.
NATIONAL SHADE TREE CONFERENCE. (Mayflower Hotel.) Sec.-Treas., L. C. Chadwick, Ohio State Univ., Columbus, Ohio.

***August 28-30.—Hazleton, Pa.**
LEAGUE OF CITIES OF THE THIRD CLASS IN PENNSYLVANIA. (Hotel Altamont.) Treas., Herman A. Early, City Hall, Harrisburg, Pa.

September 1-3—State College, Pa.
PENNSYLVANIA WATER WORKS OPERATORS' ASSOCIATION. Sec.-Treas., I. M. Glace, 22 S. 22d St., Harrisburg, Pa.

September 3-5.—State College, Pa.
PENNSYLVANIA SEWAGE WORKS ASSOCIATION. (Pa. State College.) Sec.-Treas., Bernard S. Bush, Kirby Health Center, Wilkes-Barre, Pa.

***September 3-5.—Princeton, N. J.**
GOVERNMENTAL RESEARCH ASSOCIATION. (Princeton Inn.) Sec.-Treas., Lent D. Upson, 5135 Cass Ave., Detroit, Mich.

September 3-5.—Jamestown, N. Y.
MUNICIPAL ELECTRIC WORKS ASSOCIATION OF NEW YORK STATE. (Hotel Jamestown.) Sec., T. J. McKee, P. O. Box 686, Jamestown, New York.

September 10-12.—Traverse City, Mich.
MICHIGAN MUNICIPAL LEAGUE. (Park Place Hotel.) Dir., Herbert A. Olson, 205 S. State St., Ann Arbor, Mich.

September 11-12.—Glens Falls, N. Y.
AMERICAN WATER WORKS ASSOCIATION—NEW YORK SECTION. Fall meeting. (Hotel Queensbury.) Sec.-Treas., R. K. Blanchard, 50 W. 50th St., New York.

September 15-21.—Santiago de Chile, S. A.
PAN AMERICAN CONGRESS OF MUNICIPALITIES. Address: Earl D. Mallery, Exec. Dir., American Municipal Association, 1313 E. 60th St., Chicago, Ill.

September 18-19.—Santa Fe, N. Mex.
AMERICAN WATER WORKS ASSOCIATION—ROCKY MOUNTAIN SECTION. (La Fonda Hotel.) Sec., B. V. Howe, State Office Bldg., Denver, Colorado.

September 18-19.—Mansfield, Ohio.
OHIO CONFERENCE ON SEWAGE TREATMENT. (Mansfield-Leland Hotel.) Sec., B. M. McDill, Dept. of Health, Columbus, Ohio.

September 19-20.—Providence, R. I.
NEW ENGLAND SEWAGE WORKS ASSOCIATION. (Providence-Biltmore Hotel.) Sec.-Treas., LeRoy W. Van Kleeck, State Dept. of Health, Hartford, Conn.

September 23-25.—Atlanta, Ga.
ILLUMINATING ENGINEERING SOCIETY. (Atlanta-Biltmore Hotel.) Gen. Sec., A. D. Cameron, 51 Madison Ave., New York.

September 25-26.—Boston, Mass.
NEW ENGLAND WATER WORKS ASSOCIATION. (Hotel Statler.) Sec., Frank J. Gifford, 613 Statler Bldg., Boston, Mass.

September 24-26.—Grand Rapids, Mich.
AMERICAN WATER WORKS ASSOCIATION—MICHIGAN SECTION. (Hotel Pantlind.) Sec., M. N. Gerardy, Water Board Building, Detroit, Michigan.

September 24-26.—Owensboro, Ky.
KENTUCKY MUNICIPAL LEAGUE. (Hotel Owensboro.) Exec. Sec., Carl B. Wachs, Univ. of Ky., Lexington, Ky.

Sept. 27-Oct. 2.—Atlantic City, N. J.
AMERICAN TRANSIT ASSOCIATION. (Haddon Hall.) Gen. Sec., Guy C. Hecker, 292 Madison Ave., New York.

Sept. 29-Oct. 2.—Detroit, Mich.
AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS. (Statler Hotel.) Sec.-Treas., W. C. Markham, 1220 Nat'l Press Bldg., Washington, D. C.

Sept. 29-Oct. 2.—St. Louis, Mo.
INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION, INC. (Hotel Jefferson.) Sec., Irvin Shulsinger, 8 E. 41st St., New York.

Sept. 29-Oct. 5.—Baltimore, Md.
NATIONAL RECREATION ASSOCIATION. (Lord Baltimore Hotel.) Sec., Howard S. Braucher, 315 Fourth Avenue, New York.

October 3-7.—Chicago, Ill.
INSTITUTE OF TRAFFIC ENGINEERS. (Hotel Stevens.) Sec.-Treas., W. Graham Cole, 60 John St., New York.

October 6-9.—New Orleans, La.
AMERICAN INSTITUTE OF PARK EXECUTIVES AND AFFILIATED ORGANIZATIONS. (Roosevelt Hotel.) Exec. Sec., Will O. Doolittle, Box 422, Tulsa, Oklahoma.

October 6-8.—Racine, Wis.
AMERICAN WATER WORKS ASSOCIATION—WISCONSIN SECTION. (Hotel Racine.) Sec., L. A. Smith, City Hall, Madison, Wis.

October 6-10.—Chicago, Ill.
NATIONAL SAFETY COUNCIL. M'ng Dir., W. H. Cameron, 20 N. Wacker Drive, Chicago, Ill.

October 8-10.—Lincoln, Nebr.
LEAGUE OF NEBRASKA MUNICIPALITIES. Sec.-Treas., C. E. Beals, 204 Brownell Bldg., Lincoln, Nebr.

October 9-11.—Minneapolis, Minn.
AMERICAN WATER WORKS ASSOCIATION—MINNESOTA SECTION. (Nicollet Hotel.) Sec.-Treas., Ronald M. Finch, Wallace & Tiernan Co., Inc., 414 Flour Exchange, Minneapolis, Minn.

October 9-11.—New York City.
FEDERATION OF SEWAGE WORKS ASSOCIATIONS. (Hotel Pennsylvania.) Exec. Sec., W. H. Wisely, Box 18, Urbana, Ill.

October 9-10.—Sioux Falls, S. Dak.
LEAGUE OF SOUTH DAKOTA MUNICIPALITIES. (Carpenter Hotel.) Sec., A. E. Mead, Univ. of South Dakota, Vermilion, S. Dak.

October 12-14.—Virginia Beach, Va.
LEAGUE OF VIRGINIA MUNICIPALITIES. (Cavalier Hotel.) Exec. Sec., Morton L. Wallerstein, 902 Travelers Bldg., Richmond, Va.

October 12-16.—St. Paul, Minn.
NATIONAL TAX ASSOCIATION. (Lowry Hotel.) Sec., Raymond E. Manning, Library of Congress, Washington, D. C.

October 13-16.—Fort Worth, Texas.
AMERICAN WATER WORKS ASSOCIATION—SOUTHWEST SECTION. Sec., Lewis A. Quigley, 3320 W. Berry St., Fort Worth, Texas.

October 13-16.—Sacramento, Calif.
LEAGUE OF CALIFORNIA CITIES. Sec., Richard Graves, 2121 Allston Way, Berkeley, Calif.

October 14-17.—Atlantic City, N. J.
AMERICAN PUBLIC HEALTH ASSOCIATION. (Convention Hall and Auditorium.) Exec. Sec., Dr. Reginald M. Atwater, 50 W. 50th St., New York.

***October 15-17.—Chicago, Ill.**
ILLINOIS MUNICIPAL LEAGUE. (Congress Hotel.) Exec. Dir., A. D. McLarty, 500 E. Capitol Ave., Springfield, Ill.

October 15-17.—Atlantic City, N. J.
PENNSYLVANIA WATER WORKS ASSOCIATION. (Haddon Hall.) Sec., Dr. F. Herbert Snow, 507 Telegraph Bldg., Harrisburg, Pa.

October 15-17.—Knoxville, Tenn.
TENNESSEE MUNICIPAL LEAGUE. Sec., C. C. Gilbert, 1014 Stahlman Bldg., Nashville, Tenn.

October 16-18.—Atlantic City, N. J.
AMERICAN WATER WORKS ASSOCIATION—NEW JERSEY SECTION. Sec., C. B. Tygert, P. O. Box 178, Newark, N. J.

October 16-17.—Eau Claire, Wis.
LEAGUE OF WISCONSIN MUNICIPALITIES. (Eau Claire Hotel.) Sec., Frederick MacMillin, 30 E. Johnson St., Madison, Wis.

October 18.—Morgantown, W. Va.
LEAGUE OF WEST VIRGINIA MUNICIPALITIES. (City Hall.) Exec. Sec., Hume K. Nowlan, Hinton, W. Va.

October 19-22.—Jacksonville, Fla.
NATIONAL ASSOCIATION OF ASSESSING OFFICERS. Exec. Dir., Albert W. Noonan, 1313 E. 60th St., Chicago, Ill.

October 19-22.—Los Angeles, Calif.
NATIONAL ASSOCIATION OF COMMERCIAL ORGANIZATION SECRETARIES. (Biltmore Hotel.) Asst. Sec.-Treas., Mrs. Norma McKellops, 1615 H St., N. W., Washington, D. C.

October 20-22.—Cedar Rapids, Iowa.
AMERICAN WATER WORKS ASSOCIATION—MISSOURI VALLEY SECTION. (Montrose Hotel.) Sec., Earle L. Waterman, Univ. of Iowa, Iowa City, Iowa.

October 22-24.—Chicago, Ill.
THE AMERICAN MUNICIPAL ASSOCIATION. Exec. Dir., Earl D. Mallery, 1313 E. 60th St., Chicago, Ill.

October 22-25.—Fresno, Calif.
AMERICAN WATER WORKS ASSOCIATION—CALIFORNIA SECTION. (Fresno Hotel.) Sec., Gerald E. Arnold, San Francisco Water Dept., Millbrae, Calif.

October 26-29.—New Orleans, La.
AMERICAN PUBLIC WORKS ASSOCIATION. (Roosevelt Hotel.) Acting Exec. Dir., Norman Hebden, 1313 E. 60th St., Chicago, Ill.

October 27-29.—Nashville, Tenn.
AMERICAN WATER WORKS ASSOCIATION—KENTUCKY-TENNESSEE SECTION. (Andrew Jackson Hotel.) Sec.-Treas., Howard D. Schmidt, 420 6th Ave., N., Nashville, Tenn.

***October 30-Nov. 1.—Morgantown, W. Va.**
AMERICAN WATER WORKS ASSOCIATION—WEST VIRGINIA SECTION. (Hotel Morgan.) Sec., John B. Harrington, State Dept of Health, Charleston, W. Va.

November 3-5.—High Point, N. C.
Joint meeting. (Sheraton Hotel.) AMERICAN WATER WORKS ASSOCIATION—NORTH CAROLINA SECTION and NORTH CAROLINA SEWAGE WORKS ASSOCIATION. Sec., R. S. Phillips, Box 1170, Durham, N. C.

***November 3-7.—Temple, Texas.**
LEAGUE OF TEXAS MUNICIPALITIES. (Kyle Hotel.) Exec. Sec., E. E. McAdams, 2225 Guadalupe St., Austin, Texas.

November 6-7.—Baltimore, Md.
AMERICAN WATER WORKS ASSOCIATION—FOUR STATES SECTION. Sec., Lloyd Nelson, U. S. Pipe & Foundry Co., Broad and Chestnut Sts., Philadelphia, Pa.

November 25-27.—Hollywood, Fla.
INTERNATIONAL CITY MANAGERS' ASSOCIATION. (Hollywood Beach Hotel.) Exec. Dir., Clarence E. Ridley, 1313 E. 60th St., Chicago, Ill.

***December 4-6.—Washington, D. C.**
NATIONAL INSTITUTE OF MUNICIPAL LAW OFFICERS. (Mayflower Hotel.) Exec. Dir., Charles S. Rhyne, 730 Jackson Place, N. W., Washington, D. C.

***December 11-13.—Tampa, Fla.**
FLORIDA LEAGUE OF MUNICIPALITIES. (Hotel Tampa Terrace.) Sec.-Treas., E. P. Owen, Jr., 1707 Barnett Nat'l Bank Bldg., Jacksonville, Fla.

* First appearance of notice on this page.

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● Wherever highways carry their millions of cars and trucks, friendly warning signs contribute immeasurably to safety. Equally great is the contribution of GOHI Corrugated Pipe to travel security, for these long-lived, durable, wear-, weather- and corrosion-resisting corrugated pipe culverts solve the first problem of road building . . . adequate drainage.

GOHI Corrugated Pipe offers many outstanding advantages in highway construction, all set forth in a 72-page illustrated book on culvert practice, which contains pages of valuable technical data for road engineer and builder. You may obtain a copy by addressing the GOHI fabricator nearest you.

GOHI Pipe meets Copper-Bearing Pure Iron requirements in all specifications published by nationally recognized specifying authorities.

GOHI PIPE CORRUGATED

New England Bolt Co.	Everett, Mass.
Central Culvert Co.	Ottumwa, Iowa
Capital City Culvert Co.	Madison, Wis.
Bancroft & Martin Rolling Mills Co.	S. Portland, Me.
Denver Steel & Iron Works Co.	Denver, Colo.
The Lane Pipe Corporation	Bath, N. Y.
Dixie Culvert Mfg. Co.	Little Rock, Ark.
St. Paul Corrugating Co.	St. Paul, Minn.
The Newport Culvert Co.	Newport, Ky.

GOHI CULVERT MANUFACTURERS, INC., NEWPORT, KY.

CHICAGO WILL SAVE $400,000 Per Year

The cost of removing garbage and ashes in Chicago was 18 cents a cubic yard lower in February 1941 than for the same month last year—at this rate Chicago will save $400,000 for 1941. Oscar E. Hewitt, commissioner of public works, attributes this saving to the use of Heil Conveyor Sanitation Units.

Municipalities both large and small are finding that modern Heil sanitation units cut collection costs.

Write or wire for complete details today!

THE HEIL CO.
MILWAUKEE, WISCONSIN HILLSIDE, NEW JERSEY

SAVE 50% ON FUEL — HEAT AND MELT TAR AND ASPHALT TWICE AS FAST WITH THE AEROIL "HEET-MASTER" KETTLE

The "HEET-MASTER" will produce as much "hot stuff" as two ordinary type oil-burning kettles of the same capacity. Used by leading road and airport contractors. Send for FREE Bulletin No. 196A. For Cut-Back and Emulsion Sprayers, Bulletin No. 190A. Oil-burning Lead and Pipe Compound Melting Furnaces, Bulletin No. 176A. Portable Oil Burner & Torch Outfits, Bulletin 174A. Asphalt Paving Tools & Accessories, Bulletin 312A. Asphalt Paving Tool Heaters and Asphalt Pavement Heaters, Leaflet 171RT.

Aeroil Burner Co., Inc., West New York, N. J.
CHICAGO SAN FRANCISCO DALLAS

FOR YOUR Calcium Chloride NEEDS

WRITE or WIRE:

MICHIGAN ALKALI COMPANY

General Sales Office: 60 E. 42nd St., New York, N. Y. Plants: Wyandotte, Michigan

News and Illustrations

Items of Interest to City, Town and County Officials, and Others Concerned with the Economical Construction and Efficient Operation of Public Improvement Undertakings

Gathering of Pittsburgh Equitable Meter Co. Representatives at the AWWA Convention in June

Pittsburgh-National Men at AWWA Convention

With 36 representatives present, the Pittsburgh Equitable Meter Co. 400 Lexington Avenue, Homewood, Pittsburgh, Pa., had the largest turnout among the manufacturers at the Toronto convention of the American Water Works Association, June 22 to 26, according to a recent report. Colonel W. F. Rockwell, President of the firm, presided at a series of breakfast conferences for the group, which included salesmen from both the Pittsburgh and National divisions as well as factory executive personnel. The recently announced Empire "Streemline" meter was thoroughly discussed at their meetings, and general matters of sales policy were covered.

More Trucks Needed to Meet National Needs, Says Dodge Official

According to a statement made recently by L. D. Cosart, Dodge Truck Sales Manager, a record number of motor trucks will be needed, along with railroad and waterway facilities, to handle the country's defense and domestic activities this summer. Mr. Cosart's statement was based on conditions observed by five executives of the Dodge Truck Division, Chrysler Corporation, 7900 Campeau Street, Detroit, Mich., during six weeks of conducting conferences in key cities from coast to coast.

Lee D. Cosart, Truck Sales Manager, Dodge Brothers Corporation

These meetings were conducted by Mr. Cosart, George W. Malcomson and Allison Miller, Assistant Truck Sales Managers, and D. W. Lee and L. M. Oltman, Truck Sales Engineers, who talked with Dodge dealers and field force, with manufacturers, merchants, and farmers across the country. Everywhere, Mr. Cosart states, they found industry making production of defense materials its No. 1 job, and agriculture exerting an extra effort to grow larger crops. Transporting these millions of tons of defense materials as well as heavy agricultural crops will require every vehicle that can be put into service on the highways, railways and waterways of the nation, according to Mr. Cosart.

In the construction and enlargement of Army cantonments and Navy bases in expanding airport facilities, in the construction of homes for defense industry workers, in highway building, and in many other activities, the motor truck is shouldering a greater and greater share of the transportation burden, since it is flexible and adaptable, can operate where there are no roads, and can deliver men and supplies at the exact spot where they are needed without delay and at a minimum cost.

Robert C. Wheeler on National Panel

C. V. Whitney, President of the American Arbitration Association, announced recently the appointment of eight upstate New York business and professional men to a national panel of arbitrators. Included among the new appointees was Robert C. Wheeler, Albany engineer and a member of the firm of Barker & Wheeler, 36 State Street, Albany, and 11 Park Place, New York.

Other new arbitrators are: James Forrestal, sales manager, Agfa Ansco Corporation, Binghamton; Elmer E. Finck, attorney, Buffalo; Thomas J. McDonnell, Principal, Buffalo High School; Prof. David Riesman, Jr., School of Law, Buffalo; James E. McGhee, Eastman Kodak Co., Rochester; Charles S. Wilcox, attorney, Rochester; and William P. Creager, engineer, Buffalo.

W. A. Wolff of Western Electric Dies at 58

The death of W. A. Wolff, Information Manager of the Western Electric Co. and the Electrical Research Products, Inc., has been announced at the Western Electric offices at 195 Broadway, New York. Mr. Wolff, who was 58 years old, died on July 24 while on vacation in Maine.

He had been a member of the staff of Western Electric for 36 years, since he joined it in 1905 at the age of 22 after graduating from the Columbia University School of Engineering with the degree of Electrical Engineer.

EMERGENCY WATER SUPPLY QUICKLY AT LOW COST!

A GRIFFIN WELLPOINT SYSTEM installed in three days in water bearing sand will deliver

1,000,000

GALLONS OF FILTERED WATER PER DAY OR MORE

to suit your special needs for drinking, fire, industrial, swimming pools, etc.

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Municipalities have been using this economical system successfully for years. Ask us at once for full particulars giving your requirements.

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Phone MElrose 5-7704-5

CHEVROLET TRUCKS

with "Load-Master" Engine

The Greatest Power-Pullers in Economical Transportation

Truck operators, large and small, buy more Chevrolet trucks than any other make, year after year.

Small wonder that they are buying more Chevrolet Heavy Duty trucks this year! For sturdy Chevrolets with "Load-Master" valve-in-head engine have greater pulling power than any other trucks in their field. They are "tops" for total dependability—engineered to haul big loads with the speed that these fast-moving days require—priced to cost you less than any other trucks in the biggest-selling low-price field.

Truck operators everywhere have decided that Chevrolets are first choice for making "DELIVERIES P.D.Q." —powerfully, dependably, quickly.

To solve your haulage problems, and solve them efficiently and economically, follow this nationwide swing to Chevrolet. Your Chevrolet dealer is ready to give you a convincing demonstration, any time you say.

CHEVROLET MOTOR DIVISION, *General Motors Sales Corporation*
DETROIT, MICHIGAN

FEATURES

★ TWO NEW VALVE-IN-HEAD ENGINES . . . STANDARD: 174 FOOT-POUNDS OF TORQUE—90 HORSEPOWER . . . "LOAD-MASTER": 192 FOOT-POUNDS OF TORQUE—93 HORSEPOWER*
★ NEW RECIRCULATING BALL-BEARING STEERING GEAR ★
NEW, MORE COMFORTABLE DRIVER'S COMPARTMENT
*Optional on Heavy Duty models at extra cost

60 MODELS

ON NINE LONGER WHEELBASES . . . A COMPLETE LINE FOR ALL LINES OF BUSINESS

"THRIFT-CARRIERS FOR THE NATION"

Arrow Lens Used on the G-E Novalux Traffic Signal

New Traffic Signal Arrow

A new traffic signal "arrow" lens, shown here, has been announced by the Lighting Division of the General Electric Co. Separation of the three arms of the arrow in the new lens eliminates a concentration of light at the arrow point, and thereby makes the direction of the arrow clearly discernible. Halation, or spreading of light, on the usual arrow lens sometimes makes the arrow difficult to see, especially when viewed from distances of 100 feet and greater. The new arrow may be mounted to point in any direction, and meets the specifications of the Institute of Traffic Engineers.

Rapid Expansion Program at Two Aluminum Plants

Extensive expansions and improvements are rapidly nearing completion at the Los Angeles, Calif., and Lafayette, Ind., plants of the Aluminum Co. of America, Gulf Building, Pittsburgh, Pa., as part of the $200,000,000 expansion program which this company has undertaken in order to supply defense industries with aluminum ingot and fabricated products. The program, which is entirely self-financed, crowds into two years the equivalent of at least two decades of peacetime growth.

At the Vernon, Los Angeles, plant, which was built in 1937 as a sand and permanent-mold foundry and forge plant, the expansion of facilities was begun in the spring of 1940. This included the addition of an extrusion works and a rivet plant, as well as additions and betterments to the existing aluminum foundry and forge plant. An adjacent 30 acres of land was required for the expansion; and, in terms of floor space, the works has been enlarged from 100,000 square feet to 555,000 square feet. Buildings have now been completed, and equipment is rapidly being installed to handle the increased production; so that very shortly the sand and permanent-mold casting capacity will have been increased to 593,000 pounds a month, an increase of 40 per cent, and the forging capacity to 450,000 pounds a month, an increase of 350 per cent. The new extrusion plant will be turning out extruded shapes at the rate of 1,019,000 a month, and the new rivet plant producing rivets at the rate of 70,000 pounds a month. By March, 1942, the forging capacity of the Vernon works will have been increased an additional 50,000 pounds a month.

A comparable expansion has taken place at the Lafayette, Ind., works, which produces extruded shapes and tubing. By October of this year, the floor space in this plant will have been increased from 287,000 square feet to 1,471,000 square feet. By December, the extruded shape capacity will have been expanded to six times that in 1939, and tubing capacity will have reached nine times the capacity of 1939. However, by April, 1942, the tubing capacity will have been expanded to 1,318,000 pounds a month, eleven times the capacity in 1939.

Planned as part of Aluminum Co. of America's $200,000,000 national defense expansion program, the new extrusion mill at the Vernon, Los Angeles, works of this company will soon reach a capacity of more than a million pounds of extruded shapes a month

At Danger Points

... use DAY-AND-NIGHT SIGNS

WITH

CATAPHOTE REFLECTOR BUTTONS

Untouched Photograph of Pennsylvania Turnpike

These little Cataphote Reflector Buttons do a BIG JOB in promoting safer night driving on the nation's highways! That's just one of many applications of these scientifically designed Reflectors... chosen for proven superiority in *reflecting performance* and *permanence*. Investigate Cataphotes for better traffic control everywhere on roads, streets and bridges.

Write concerning your requirements.

WESTERN CATAPHOTE CORP. · Toledo, Ohio

PITTSBURGH •DES MOINES FOR BETTER VALUE *-at low cost*

Steel Swimming Pools

Lower in first cost—finer in appearance and performance—easily maintained! Furnished complete with all desired fittings and accessories—permanently water-tight, frost-proof, good for a lifetime. Write for Bulletin No. 402.

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Des Moines, Ia. . . . . 913 Tuttle Street

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TO HEALTH DEPARTMENTS

When health departments need assistance in their educational job of promoting public health, they turn to the Mimeograph duplicator

For all over the country civic health officers have found Mimeograph equipment indispensable in assisting the public to avoid health hazards.

Educational materials, folders and publicity to help the poorer people of the community take better care of themselves . . . bulletins on prenatal care and infant care . . . contest materials for schools . . . notices to parents of school children . . . inspectors' report forms . . . regulations . . . statistical records . . . and the departmental annual report—almost everything the department needs can be produced when the department wants it—within the department's budget.

And more than that—the Mimeograph duplicator helps give credit where credit is due . . . in winning community support for the forward-thinking municipal governments providing these public health facilities. Find out how it can work with your department. Call the Mimeograph distributor in your community, or write A. B. Dick Company, Chicago.

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GET YOUR COPY NOW!

Practical suggestions for health departments are just a few of the many serviceable ideas for saving money, increasing civic service, and winning the friendship and support of the community contained in this new idea-portfolio. Hundreds of municipal officers have already proved their value. Put them on the job, helping you and your department. Clip and mail the coupon today for your free copy of The American City Speaks.

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Send me a free copy of *The American City Speaks.*

NAME.....

TITLE.....

STREET.....

CITY.....*STATE*.....

During August we hope you will remember to mention THE AMERICAN CITY.

G. C. Stephenson

G. C. Stephenson to Be Koppers Sales Manager

G. C. Stephenson, of Pittsburgh, has been appointed Sales Manager for the Tar and Chemical Division of Koppers Co., Koppers Building, Pittsburgh, Pa., it was recently announced by J. N. Forker, Vice-President of the company in charge of this division.

Mr. Stephenson became affiliated with the Koppers organization in 1929 as a salesman, and for the past ten years has been manager of Creosote sales. Before joining Koppers he was Chief Chemist at wood-treating plants of the A. T. and S. F. Railroad, and Chemist and Superintendent at the Port Reading, N. J., creosote plant of the Reading Co.

Gar Wood Announces New Hoist Models

Gar Wood Industries, Inc., 7924 Riopelle Street, Detroit, Mich., is now in production of several new arm-type hydraulic hoist models which are recommended for installation on 1½- to 2-ton truck chassis, and especially adaptable for use in connection with dump-bodies from 8 feet to 10 feet in length, according to a recent announcement by W. H. Hammond, Sales Manager of the Hoist and Body Division.

Mr. Hammond stated that the new hoists, which are being manufactured in three sizes—D6R, D7R, and D7LR, involve a new and exclusive type of lifting arrangement. Because the body is lifted farther forward than with the conventional arm-type units, the lifting effort is reduced considerably, and is confined within the self-contained assembly of the hoist unit.

Other features ascribed to the new models, such as minimum stress on body, hinges, and truck chassis frame, longer lever arm, fewer working parts, minimum oil pressure, low mounting (when specified), and minimum weight for an arm-type hoist, are described and illustrated in the new Gar Wood Bulletin No. 29, which may now be obtained by writing to the manufacturer and mentioning this item.

One of the New Gar Wood Arm-Type Hydraulic Hoist Models

New Development in K&M "Century" Pipe

Keasbey & Mattison Co., Ambler, Pa., has recently come out with an exclusive development in the asbestos-cement pipe field. According to a recent announcement, light-weight asbestos-cement pipe is now available for the first time in 18-foot lengths. K&M "Century" A-C pipe, in the new 18-foot lengths, comes in 6-inch and 8-inch sizes, Class 150. These longer lengths eliminate 113 couplings per mile of line, it is said, and require 28 per cent fewer joints, thus substantially reducing the installation cost of a project. Eighteen-foot pipe is particularly desirable on long stretches of line.

"Century" 13-foot pipe is still available for those cases where trench conditions make shorter lengths more advantageous. The proper lengths to be used on a particular job should be based on a thorough consideration of the problems at hand.

Niagara Alkali Unites with Affiliated Company; J. C. Cassidy President

A recent announcement by the Niagara Alkali Co., 60 East 42d Street, New York, states that the combined activities of this company and the Electro Bleaching Gas Co., affiliated since 1915, will hereafter be operated under the name of Niagara Alkali Co. This will effect no change in management, facilities or personnel.

J. Clarke Cassidy, for many years Works Manager of Niagara Alkali Co. and Electro Bleaching Gas Co., has been elected President of the united organization. At the same time, E. D. Kingsley was elected Chairman of the Board, while S. W. Jacobs and S. J. White continue as Vice-Presidents. Mr. Cassidy brings to the position of President long and valuable experience in both the production and management ends of the business, which is the manufacture of caustic soda, caustic potash, carbonate of potash, paradichlorobenzene and EBG Liquid Chlorine. Many of the pioneering steps in introducing these products and adapting them to new uses have been brought about with the cooperation of Mr. Cassidy as Works Manager.

STOP
JOINT LEAKAGE

with CARSON
MECHANICAL JOINTS
• CHARCOAL IRON BOLTS •
for Cast Iron Pipes and Fittings
also Leak Clamps
WRITE FOR PRICES
Carson-Cadillac Co.
1221 PINSON ST. BIRMINGHAM, ALA.

See page 66 of
our new 96-page catalog
for information on this
CUSHIONED
SWING CHECK VALVE

This Swing Check Valve is properly designed for balanced operation, and for allowing full pipe line flow with minimum pressure drop; and it is especially arranged with cushion chamber on the side to prevent any slapping or banging of the disc against the seat on reverse flow.

GOLDEN-ANDERSON
VALVE SPECIALTY CO.
Fulton Building Pittsburgh, Pa.

Burroughs

TAX RECEIPTING MACHINE

provides complete protection for municipal funds

No longer need tellers and cashiers rely upon the inadequate protection of pen and ink, rubber stamps and perforators when receipting bills. For their protection, Burroughs Tax Receipting Machine not only receipts the bill but also records the amount on a locked-in audit tape.

Automatic features assure speed, simplicity and ease of operation. There are many models, with or without cash drawer; all are compact in size, remarkably low in price.

Ask your local Burroughs office for a demonstration on tax and utility bills, receipts for fees, fines and other municipal revenues. Or, if you prefer, mail the coupon for complete information.

Merely enter the amount of the collection on the standard visible keyboard and depress the motor bar. The machine prints a consecutive number, the date, the amount collected and the cashier's symbol on the bill, on the duplicate copy or stub of the bill, and on a locked-in audit tape.

Amounts also accumulate into a locked-in total against which cash is balanced. Each day's audit tape is filed in an envelope indexed by date, thus creating a history of all collections.

BURROUGHS ADDING MACHINE COMPANY
6655 Second Avenue, Detroit, Mich.

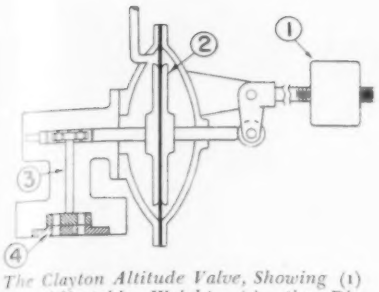
Please send me complete information about Burroughs Tax Receipting Machine.

Name_____

Title_____

Street_____

City_____



The Clayton Altitude Valve, Showing (1) *the Adjustable Weight,* (2) *the Diaphragm Plate,* (3) *the Pilot Valve Shaft, and* (4) *the Pilot Valve Ports*

Accurate Tank Level Control with New Valve

A new altitude valve, which the manufacturers claim gives accurate level control, is leak-proof, eliminates hammer and line shock, has adjustable operating speeds, and does not require a check-valve, has been developed by Clayton Mfg. Co., Alhambra, Calif. The Clayton valve operates through a diaphragm, which transmits the varying pressure within the tank to the pilot valve.

The static head of the tank is transferred through a small pilot line to the diaphragm plate of the control. This head is accurately measured and balanced by the adjustable weight. A changing level in the tank moves the weight either up or down; and this movement mechanically rotates the pilot valve shaft to divert and utilize the line pressure as the opening and closing force of the valve.

The pilot valve ports admit line pressure to the hydraulic chamber to close the valve, or drain the hydraulic chamber to atmosphere, causing the valve to open. Regardless of variations in line pressure or flow capacity of the valve, only a small quantity of liquid or a very small mechanical force is required to rotate the pilot. This allows the use of a small, self-lubricated, stainless steel disc with very small frictional surface.

Full information on the Clayton altitude valve will be found in a bulletin, Form C-69, which will be furnished by the manufacturer promptly to those mentioning this item.

New Base for Paints Used in Sewage Plants

New paints which will resist the corrosive atmosphere of sewage-treatment plants have been developed from a chlorinated rubber paint base, according to an announcement by Hercules Powder Co., Inc., 915 King Street, Wilmington, Del. Parlon, the new base, is available to all paint manufacturers for their own formulations.

Corrosion of metal and concrete surfaces in sewage-treatment plants is caused by the action of hydrogen sulfide generated in the sewage by bacterial action. This gas, combining with the oxygen of the air and the moisture always present in these plants, produces dilute sulfuric acid which quickly attacks first the paint and then the metal or concrete beneath. The new paints are suitable for treatment plants because of their resistance to weak or strong acids and alkalies, as well as alcohol, gasoline, naphtha, and mineral oils and greases. While the paints are soluble in animal and vegetable oils and greases, these oils do not reach walls, floors, ceilings and machinery for which the paints are recommended.

The new chlorinated rubber base, manufactured by Hercules Powder Co., Inc., has been used by an Eastern paint manufacturer in the development of a specialized paint for sewage-treatment plants. The paint has been used successfully at Tarrytown, N. Y.; Woodbridge, Asbury Park, Perth Amboy, and Rahway Valley Joint Meeting, N. J.; New Britain and New Haven, Conn.; and Springfield, Mass., sewage-treatment plants.

Engineering Degree to Cochrane Sales Manager

S. D. Distelhorst, Sales Promotion Manager of Cochrane Corporation, 17th and Allegheny Avenue, Philadelphia, Pa., was awarded a professional engineering degree by Purdue University in June. Mr. Distelhorst graduated from Purdue in 1935 with a Bachelor of Science degree in electrical engineering. His thesis was titled "A Practical Advertising and Sales Promotion Plan for Cochrane Corporation," and was prepared under the direction of Dr. C. F. Harding of Purdue.

A NEW *Economical*

PORTABLE FIRE PUMP

- *Do you know its name?*
- *What it will do?*
- *How soon it is available?*

Ask us for a practical description of this remarkable economical emergency fire pump.

With this *NEW* economical light-weight portable fire pump you can make immediate use of *any* water otherwise inaccessible without this pump. It gives you the jump on those outlying fires.

Don't wait until you must have it, find out from us—

NOW!

GRIFFIN WELLPOINT CORP.
729 E. 140th St., New York, N. Y.
Phone MElrose 5-7704-5

Compressor Savings

that mean $'s to you!

Use

low-priced, lightweight

SMITH AIR COMPRESSORS

Think of the many advantages of such a lightweight portable compressor! Move it easily from one job to another. Tow it at permissible truck speeds. Made with FORD MOTORS and standard parts—its ruggedness and efficiency are sources of constant satisfaction to users everywhere. Repairs and parts available at any Ford garage. Priced far below standard compressors of equal capacity. 60 cu. ft. size uses only 1 gal. of gasoline an hour! (Head equipped with high speed compressor valves; automatic unloading and idling.) All the power you'll need for a majority of compressor work. Why not take advantage of this important way to save?

With a Ford Motor and shop facilities you can assemble your own Smith Compressor. We will furnish a Smith Compressor Head and Accessories with complete instructions for mounting.

Write for free booklet

GORDON SMITH & CO.
425 College St. Bowling Green, Ky.

How a great Public Utility protects its Records

WITHOUT PUBLIC UTILITIES and other City Management functions our broad national defense program would come to an abrupt halt. And without valuable day-to-day operating and engineering records City Governments would be badly crippled. See, in Remington Rand's new Safe-Cabinet sound-movie film, how Public Utilities and other City Departments can bring *certified protection* to their records while at the same time they become vastly more efficient "*machinery of management*" tools providing increased production, decreased operating costs and greater forces of public service.

A MILLION DOLLARS A DAY—that's the title of this new sound-movie developed in cooperation with Remington Rand research engineers by a leading industrial film concern. It tells the story in a fascinating, dramatic, highly interesting 30 minute presentation of fires' ravenous daily toll—"*a million dollars a day*"—and how City Executives can help reduce this dreadful drain on our national resources. ***Be sure to use the coupon below!***

Remington Rand Inc.

BUFFALO, NEW YORK

BRANCHES EVERYWHERE

Lowell Thomas tells a Story

You'll want to SEE *and* HEAR!

Make arrangements to have your executive staff and department heads—from 5 to 500—see this thrilling exposé! There is no charge or obligation. The coupon at the right will bring you a free prospectus and full details. Mail it today!

Remington Rand Inc.
Dept. AC-841
Buffalo, New York

Please send me your free prospectus outlining the sound-film "A MILLION DOLLARS A DAY".

Name .....

Department .....

Address .....

City & State .....

When you write for that catalog, kindly mention THE AMERICAN CITY.

W. T. Randall

Neptune Official Heads Canadian Industry Survey

W. T. Randall, Vice-President and General Manager, Neptune Meters, Ltd., Toronto, Ont., has been appointed chairman of the Toronto zone in connection with the survey and coordination of industrial production for war purposes undertaken by the Canadian Manufacturers' Association and the Canadian Chamber of Commerce. For the purpose of obtaining all possible information as to Canada's productive capacity, the Dominion has been divided into 53 zones, each with a chairman. Questionnaires previously sent to all industries in Canada will give each zone chairman complete information on machine tools, floor space, and production capacity of all industrial plants, large and small, in his territory. It is expected that one of the important results of this survey will be further coordination of war-industry production through distribution of the work and arrangement for subcontracts, by the Department of Munitions and Supply.

New Ambulances for New York City

Realizing the desirability of modern ambulance equipment, the city of New York recently stepped up its fleet by the purchase of the seven new Cadillac ambulances pictured below. Built of all-steel welded construction, they incorporate all the latest improvements for safety, comfort and convenience. Included in the equipment supplied with each ambulance are special bench chairs that can be converted into an emergency cot, an inhalator recessed in a medicine cabinet, a first aid supply compartment, two splint compartments, a hot-water heater, electric fans, and many other modern refinements.

The ambulances were built by Superior Coach Corporation, Lima, Ohio, and sold to the city of New York through their local distributors, Metropolitan Equipment Corporation of Long Island City.

Penn Salt Contest for Water-Works Engineers

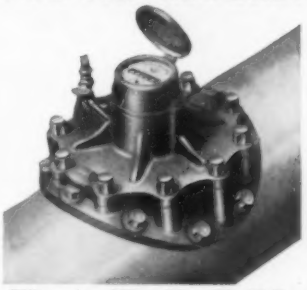
A prize contest open to water-works superintendents and engineers has just been announced by Pennsylvania Salt Mfg. Co. 1000 Widener Building, Philadelphia, Pa. The purpose of the contest is to obtain interesting case histories of emergency water purification with Perchloron, the high-test calcium hypochlorite made by Penn Salt.

Such case histories may deal with unusual conditions where normal chlorination has been rendered impractical because of floor or fire, accidental rupturing of mains, or pollution entering a water main at some inaccessible or not easily traceable point. Prizes of $25 will be awarded by Penn Salt for the most outstanding case histories, and authors of other reports deemed worthy of recognition but not meriting major prizes will receive prizes of $5 each.

Entries in this contest are limited to a length of 500 words or less; and the closing date for entries is October 1, 1941. Water-works superintendents and engineers wishing to enter the contest should send their case histories as soon as possible to the address given above.

Recent Modern Additions to New York City's Ambulance Fleet

HERE IS ONE FOR THE RECORD!



SPARLING

Main-Line Saddle-Type WATER METER

These inexpensive meters can easily be installed on existing lines to totalize flows from pumps, etc., enabling you to keep essential records. Rate-of-flow instruments can be added if and when needed. Tube meters for all lines, too.

Bulletin 307 upon request.

SPARLING

Box 3277, Terminal Annex ..... LOS ANGELES
3104 Michigan Avenue ..... CHICAGO
622 Broadway ..... CINCINNATI
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ROUGH ON RUST!

Rid your water tanks and filter beds of rust by the use of—

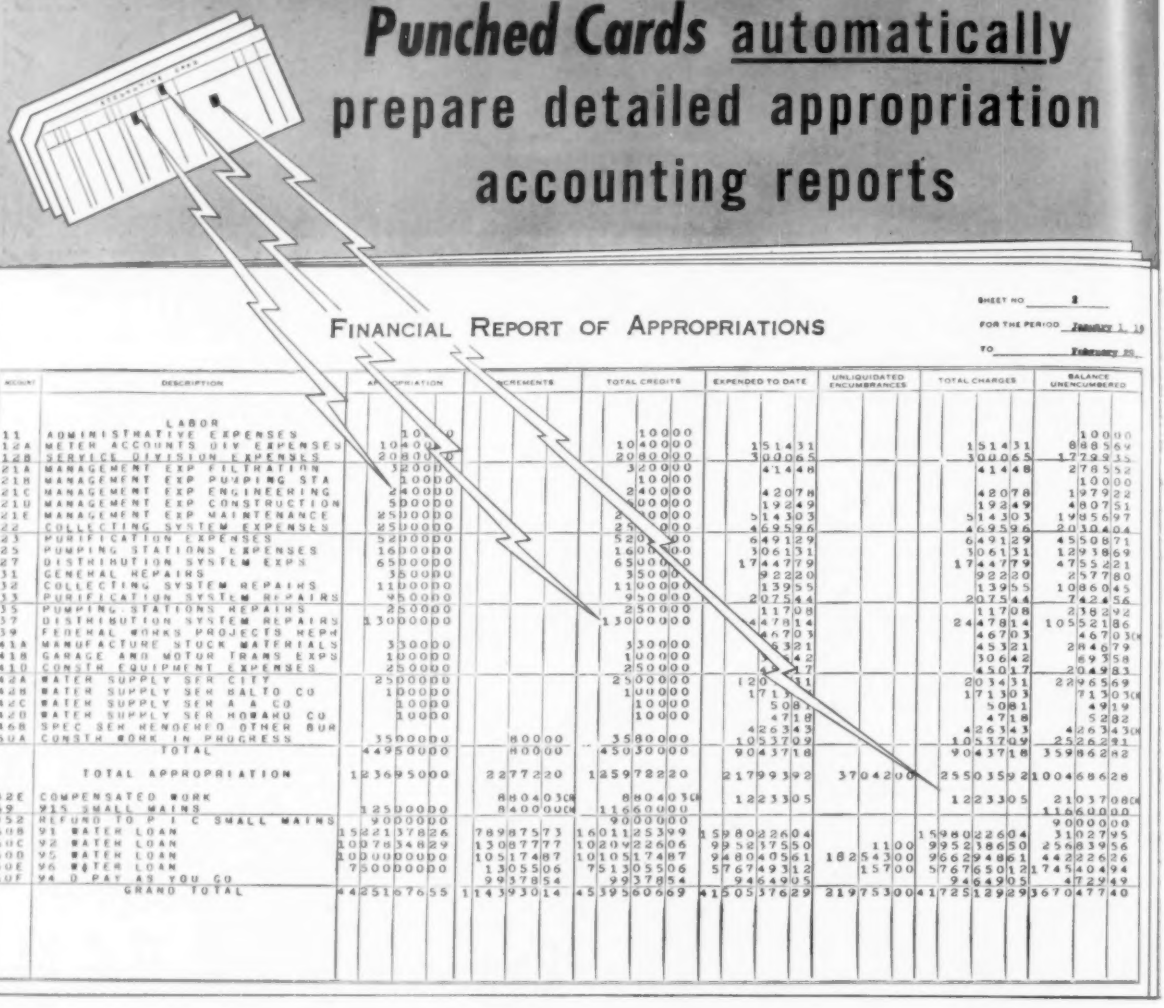
RUSTA RESTOR TRADE MARK REGISTERED

An electrical device that positively prevents rust and will last as long as your tanks. It pays for itself in one to four years.

Write for Circular

RUSTA RESTOR CORPORATION
1450 W. State St. Fremont, Ohio

Punched Cards automatically prepare detailed appropriation accounting reports



FINANCIAL REPORT OF APPROPRIATIONS

SHEET NO. 2
FOR THE PERIOD January 1, 19
TO February 28,

ACCOUNT	DESCRIPTION	APPROPRIATION	INCREMENTS	TOTAL CREDITS	EXPENDED TO DATE	UNLIQUIDATED ENCUMBRANCES	TOTAL CHARGES	BALANCE UNENCUMBERED
	LABOR							
11	ADMINISTRATIVE EXPENSES	10 0		10000				10000
12A	METER ACCOUNTS DIV EXPENSES	104000		104000	15143 1		15143 1	88856 9
12B	SERVICE DIVISION EXPENSES	208000		208000	30006 5		30006 5	177993 5
21A	MANAGEMENT EXP FILTRATION	32000		32000	4144 8		4144 8	27855 2
21B	MANAGEMENT EXP PUMPING STA	10000		10000				10000
21C	MANAGEMENT EXP ENGINEERING	240000		240000	42078		42078	197922
21D	MANAGEMENT EXP CONSTRUCTION	50000		50000	1924 9		1924 9	48075 1
21E	MANAGEMENT EXP MAINTENANCE	250000		250000	51430 3		51430 3	198569 7
22	COLLECTING SYSTEM EXPENSES	250000		250000	46959 6		46959 6	203040 4
23	PURIFICATION EXPENSES	520000		520000	64912 9		64912 9	455087 1
25	PUMPING STATIONS EXPENSES	160000		160000	30613 1		30613 1	129386 9
27	DISTRIBUTION SYSTEM EXPS	650000		650000	174477 9		174477 9	475522 1
31	GENERAL REPAIRS	35000		35000	9222 0		9222 0	25778 0
32	COLLECTING SYSTEM REPAIRS	110000		110000	1395 5		1395 5	108604 5
33	PURIFICATION SYSTEM REPAIRS	95000		95000	20754 4		20754 4	74245 6
35	PUMPING STATIONS REPAIRS	25000		25000	1170 8		1170 8	2382 92
37	DISTRIBUTION SYSTEM REPAIRS	1300000		1300000	44781 4		44781 4	1055218 6
39	FEDERAL WORKS PROJECTS REPM				4670 3		4670 3	4670 3
41A	MANUFACTURE STOCK MATERIALS	33000		33000	632 1		4532 1	28467 9
41B	GARAGE AND MOTOR TRANS EXPS	10000		10000	142		3064 2	6935 8
41D	CONSTR EQUIPMENT EXPENSES	25000		25000	47		4501 7	2049 83
42A	WATER SUPPLY SER CITY	2500000		2500000	12011		2034 31	22965 69
42B	WATER SUPPLY SER SALTO CO	10000		10000	171 1		1713 03	7150 3
42C	WATER SUPPLY SER A A CO	10000		10000	508		5081	4919
42D	WATER SUPPLY SER HOMAHU CO	10000		10000	47 18		4718	5282
46B	SPEC SER RENDERED OTHER BUR				4263 43		4263 43	4263 43
60A	CONSTR WORK IN PROGRESS	3500000	80000	3580000	1053709		1053709	2526291
	TOTAL	4495000	80000	4503000	904371 8		904371 8	3598628 2
	TOTAL APPROPRIATION	12369500 0	2277220	12597222 0	2179939 2	3704200	2550359 2	10046862 8
42E	COMPENSATED WORK		880403CR	880403CR	122330 5		122330 5	2103708 0CR
69	91% SMALL MAINS	1250000 0	8400000CR	1160000 0				1160000 0
952	REFUND TO P I C SMALL MAINS	900000		900000				900000
60B	91 WATER LOAN	15221378 26	7898757 3	16011253 99	15980226 04		15980226 04	3102795
60C	92 WATER LOAN	10078348 29	1308777 7	10209226 06	9952175 50	1100	9952386 50	256839 56
60D	95 WATER LOAN	100000000 0	1051748 7	10105174 87	9480405 61	1825430 0	9662948 61	442226 26
60E	96 WATER LOAN	17500000 0	1305506	7513055 06	5767493 12	15700	5767650 12	1745404 94
60F	94 D PAY AS YOU GO		9937854	9937854	946490 5		946490 5	47249
	GRAND TOTAL	44251676 55	1143930 14	45395606 69	41505376 29	2197530 0	41725129 29	3670477 40

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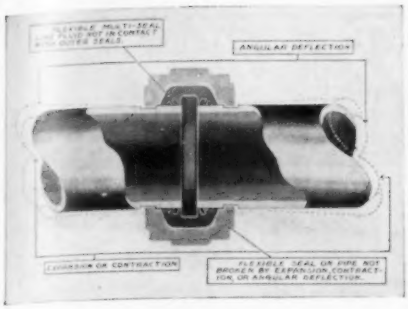
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Dillon Pipe Couplings Have Multi-Seal Feature

Developed within the past few years to meet the increasing demand for pipe-line work, the type of pipe coupling shown in the illustration is manufactured by The Dillon Co., 226-F East 5th Street, Tulsa, Okla. It consists of a housing made in two parts and bolted together, and a rubber multi-seal ring that fits over the ends of the pipe and is held in place by the housing. The housing fits into the standard groove of the pipe, which can be secured at prices lower than threaded pipe.

With the multi-seal rubber there are three points of contact on each side of the pipe joint, and this construction, the manufacturer states, makes it impossible for fluid or gas to leak past the seals. The rubber rings used in the couplings are said to resist oil, gasoline, and acids. This form of pipe joint, it is stated, will permit of the normal contraction and expansion of the pipe line and also of an angular deflection in the line at the joints of a little over 5 degrees from a straight line. These features permit the line to be made up and remain above the ground in the hot sun, expanding and contracting as necessary and still remain tight when it is cool at night. Self-aligning and self-sealing features incorporated in the coupling design contribute to ease of installation and to satisfactory performance.

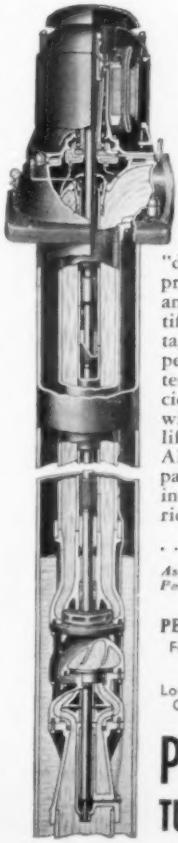
Dillon couplings are made in only one weight in each size, so that it is not necessary to carry a varied assortment of weights in stock; and wherever these couplings are used, the line can be used for either high or low pressures. An illustrated leaflet is available from the manufacturer which further describes and illustrates the uses of Dillon couplings, not only for pipe lines but also for tank connections, valves, separators, etc.

FSWA Convention Will Feature Timely Problems

For importance and timeliness of technical discussions, the second annual convention of the Federation of Sewage Works Associations will mark a new milestone in sewage-works meetings. The convention, which will be headquartered at the Hotel Pennsylvania, New York City, October 9, 10, and 11, will bring together hundreds of engineers, operators, and educators from all sections of the country, who will take part in discussions of national stream-pollution questions and problems of treatment-works operation. The program will cover fully all phases of sewage and industrial-wastes treatment, and will place particular stress on the control and operation of various types of treatment processes.

Sanitary engineering leaders from all sections of the country are scheduled on the program, which is nearing completion by the convention program committee. The New York City treatment program and operating experiences will be summarized by metropolitan officials. Among the vital questions scheduled for discussion are the following: the effect of industrial wastes on stream-pollution conditions; utilization of sludge gas in moderate-sized treatment plants; operation of small pumping stations; and factors influencing vacuum filtration of sludge. An outstanding feature of the convention will be the most complete exhibit of sewerage and sewage-treatment equipment ever presented in the United States.

Among the speakers already listed by the program committee are Prof. Gordon M. Fair, Milton P. Adams, George C. Martin, Warren J. Scott, Grant M. Olewiler, A. L. Genter, Prof. Earle B. Phelps, C. C. Larson, G. E. Griffen, W. Donaldson, and A. C. Berry. C. A. Emerson is Chairman of the Federation; A. S. Bedell is Chairman of the General Convention Management Committee; F. W. Gilcreas is Chairman of Program; and Morris M. Cohn, City Hall, Schenectady, N. Y., heads the committee on Publicity and Attendance.



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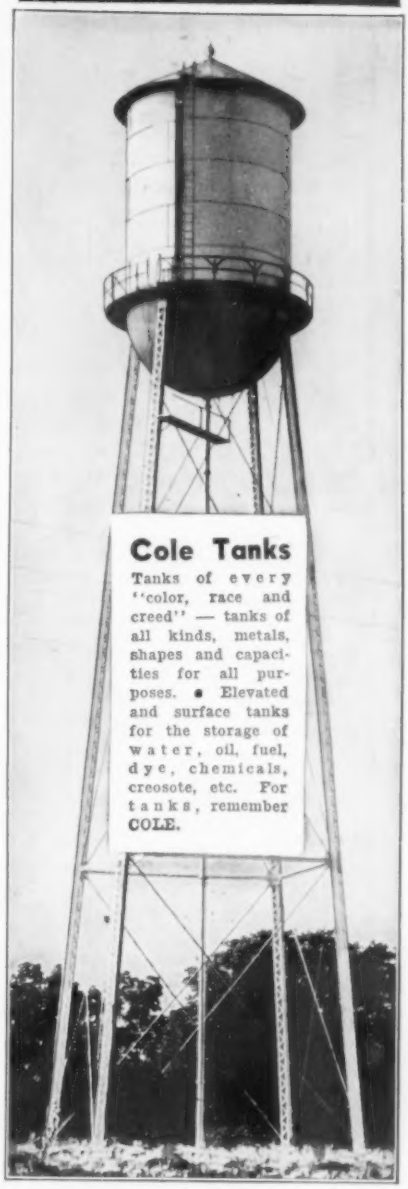

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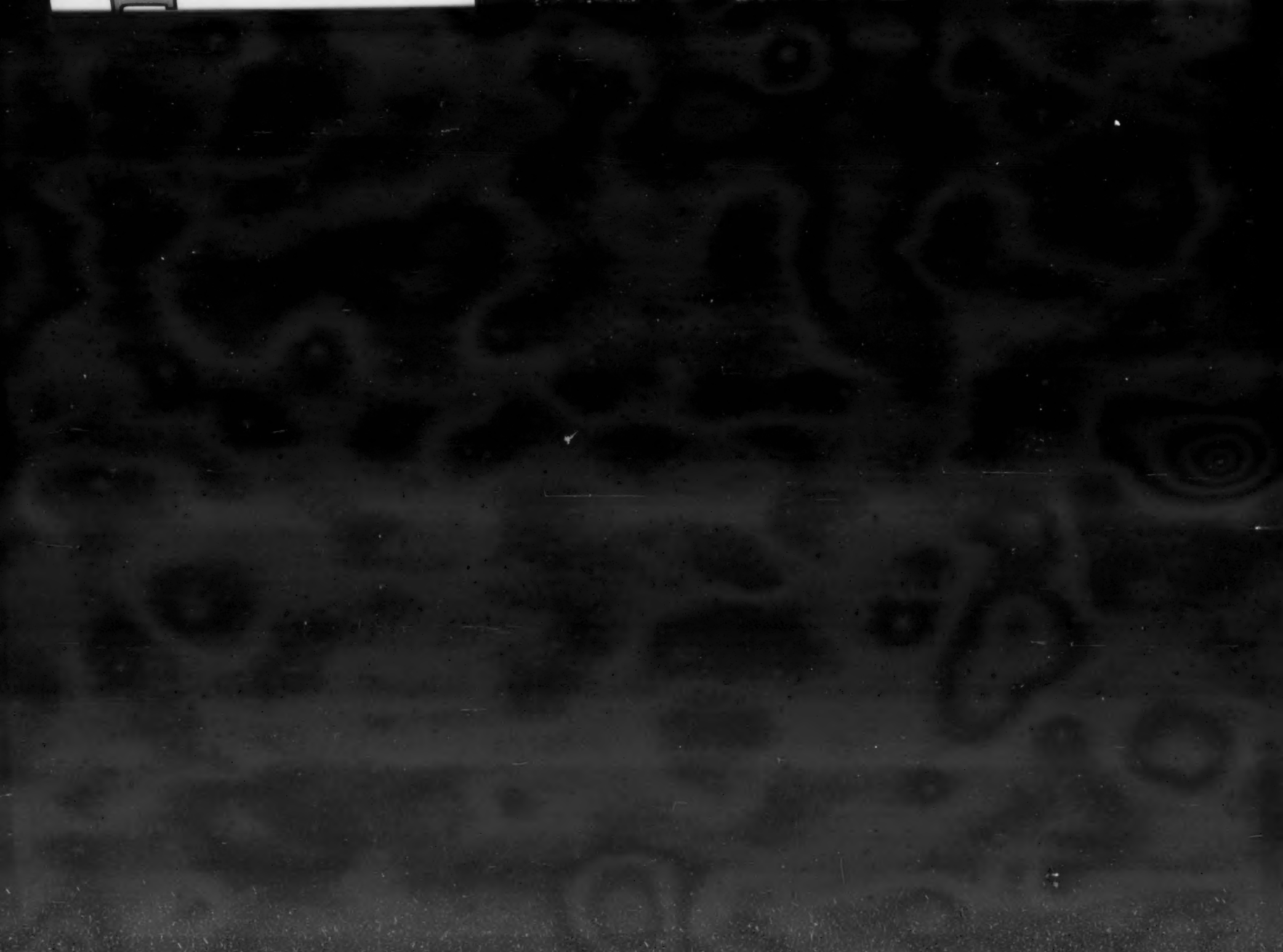

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